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ABSTRACT

This document is a teacher's guide for a unit in the college animal science curriculum. It is intended to be used for 20 hours of instruction for freshmen as an introduction to animal science. It explores the livestock industry and builds a foundation for livestock selection. The unit's objectives are to help the student develop an understanding of the history, importance, and functions of the livestock industry, and the ability to identify animal parts, select livestock, and to identify breeds of livestock. The unit is divided into material for six jobs, as follows: (1) examining the history of the livestock industry; (2) recognizing the importance of the livestock industry; (3) understanding the functioning of the livestock industry; (4) identifying animal parts; (5) selecting livestock and giving reasons for the selection; and (6) identifying breeds of livestock. Each of the jobs includes objectives, guide questions, references, an approach to interest students, key facts about the content of the material, student learning activities, and transparency masters. A list of the names and addresses of breeding associations for beef, swine, sheep, dairy cattle, and horses is included as part of job six. (KC)

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INTRODUCTION TO ANIMAL SCIENCE

Unit A-3

by

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North Dakota State University
Fargo, North Dakota

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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CE 029 635

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Cooperative Extension Service, North Dakota State University, Fargo, North Dakota.

INTRODUCTION TO ANIMAL SCIENCE

Jobs Included

1. Examining the History of the Livestock Industry.
2. Recognizing the Importance of the Livestock Industry.
3. Understanding the Functioning of the Livestock Industry.
4. Identifying Animal Parts.
5. Selecting Livestock and Giving Reasons.
6. Identifying Breeds of Livestock.

Intended Use

This unit is intended as twenty hours of instruction for freshmen as an introduction to animal science. It explores the livestock industry and builds a foundation for livestock selection.

Unit Objectives

1. To develop an understanding of the history of the livestock industry.
2. To develop an understanding of the importance of the livestock industry.
3. To develop an understanding of how the livestock industry functions.
4. To develop the ability to identify animal parts.
5. To develop the ability to select livestock.
6. To develop the ability to identify breeds of livestock.

References:

Basic Vocational Agriculture I. Vocational Instructional Services, Texas A & M University, College Station, Texas.

Bundy, Clarence E. and Ronald Diggins. Livestock and Poultry Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

Edgerly, Charles G. M. Dairy Cattle Judging Guide. Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

Ensminger, M. E. Animal Science. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1977.

Fowler, Stewart H. The Marketing of Livestock and Meat. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1961.

Hunsley, Roger E., W. Malcolm Beeson, and Julius E. Nordby. Livestock Judging, Selection And Evaluation. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1978.

Johnson, John N. Livestock Production. Division of Independent Study, State University Station, Fargo, North Dakota, 1973.

Livestock Judging Guide. Cooperative Extension Service, North Dakota State University, Fargo, North Dakota.

Introduction To Agriculture. California Vocational Agriculture Curriculum Guidelines, Vocational Education Productions, California Polytechnic State University, San Luis Obispo, California, 1977.

1979 Handbook of Agricultural Charts. United States Department of Agriculture, Agricultural Handbook Number 561, Washington, D.C., October 1979.

North Dakota Agricultural Statistics 1980. North Dakota Crop and Livestock Reporting Service, North Dakota State University Agricultural Experiment Station and the U.S. Department of Agricultural Economics, Statistics and Cooperatives Service, Fargo, North Dakota, May 1980.

Romans, John R. and P. Thomas Ziegler. The Meat We Eat. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1974.

Stone, Archie A. Careers In Agribusiness and Industry. Danville, Illinois: The Interstate Printers & Publishers, 1970.

Vocational Agriculture I. Oklahoma State Board of Vocational and Technical Education, Stillwater, Oklahoma, 1971.

Warwick, Everett J. and James E. Legates. Breeding and Improvement Of Farm Animals. New York, New York: McGraw-Hill Book Company, 1979.

Job 1: Examining the History of the Livestock Industry.

Objectives:

The objectives of this job shall be met at a level predetermined by the instructor. The manner in which they are evaluated shall also be determined by the instructor.

Upon completion of this job, the students shall be able:

1. to understand the importance of the domestication of animals to developing civilizations.
2. to list important events in improving livestock.
3. to list technological changes which affected the livestock industry.

Guide Questions:

1. Why was the domestication of animals important in the development of civilizations?
2. How was the improvement of livestock brought about?
3. What technological changes affected the livestock industry in the 20th century?

References:

Bundy, Clarence E. and Ronald V. Diggins. Livestock and Poultry Production. Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1968.

Ensminger, M. E. Animal Science. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1977.

Fowler, Stewart H. The Marketing Of Livestock And Meat. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1961.

1979 Handbook Of Agricultural Charts. United States Department of Agriculture, Agricultural Handbook Number 561, Washington, D.C., October 1979.

Warwick, Everett J. and James E. Legates. Breeding and Improvement Of Farm Animals. New York, New York: McGraw-Hill Book Company, 1979.

Interest Approach:

Ask the students why they study history in school. Point out that just as they can learn about the world by studying its history, they can learn about the livestock industry by studying its history.

Key Facts:

I. Domestication of Animals.

A. Domestication of animals was an important step in developing civilization.

1. Provided a steady source of food and clothing.

2. Used for transportation and tilling soil.

B. Animals domesticated.

1. Dog.

a. First animal domesticated.
b. Many uses.

1) Aided in hunting.
2) Added protection at night.
3) Draft, pulling wagons or sleds.
4) Food.

2. Cattle.

a. First domesticated in Europe and Asia.
b. Used first for meat, then draft.
c. Milking ability also developed later.

3. Sheep.

a. First domesticated in Europe and northern Asia.
b. Skins were used for clothing in cold climate.

4. Swine.

a. Selected for ability to fatten quickly.
b. Developed from wild stock in Europe, Asia, and Africa.

5. Horses.

a. Last to be domesticated.
b. Used for food at first.
c. Later used for draft and pulling chariots, then for riding.

II. Development and Improvement of Breeds.

A. No improvements were made during the dark and middle ages.

    [illegible] All of the livestock in a kingdom grazed together.
    2. There was no selection of breeding stock.
B. Livestock improvement began in England during the 18th century.
    1. Individual ownership rather than everything belonging to the king.
    2. Enclosed pastures allowed selection of breeding.
    3. Size and growth rate greatly improved.
C. Importation into America.
    1. There were no cattle, sheep, hogs or horses in America before 1493.
    2. Columbus brought livestock on his second voyage.
    3. Cortez brought horses and sheep to Mexico in 1519.
D. Development in U.S. was slow until 1800 because of the limited number of animals to choose from.
E. Purebred breed development began in England in the 19th century.
    1. Robert Bakewell was very influential.
    2. Breeding program was to "breed the best to the best."
    3. Began making distinctions between draft, meat, and milking purposes in cattle.
    4. Hog breeds were either bacon or lard type.
    5. Sheep breeds developed for either meat or wool quality.
    6. Many of these breeds were imported to the U.S.
F. Large movement toward purebred herds from 1870 to 1900 replacing the Texas Longhorn and the Arkansas Razorback.

III. Technological Changes Affecting the Livestock Industry.
A. Tractors and automobiles.
    1. Replaced both draft and light horses.
    2. Number of horses in the U.S. dropped from 20 million in 1920 to 3.1 million in 1960. (Transparency 1)

3. Increased recently as more used for pleasure.

B. Refrigerated transportation.

   1. The growth of railroads following the Civil War caused a centralization of slaughtering around Chicago.

   2. Improved highways and truck transportation caused a decentralization following World War I.

C. Vegetable oils.

   1. Decreased the demand for lard around 1950.

   2. Selection of hogs and cattle changed from a maximum amount of fat to a minimum.

   3. Animal fat consumption replaced by vegetable oils. (Transparency 2)

D. Synthetic fibers.

   1. Demand for wool decreased.

   2. Sheep numbers in the U.S. dropped from 52 million in 1940 to 30 million in 1950. (Transparency 3)

   3. Wool currently makes up a small percentage of fiber consumption. (Transparency 4)

E. Artificial insemination.

   1. Made herd improvement easier and faster.

   2. Used extensively in dairy industry.

      a. Improved production per cow.
      b. Number of dairy cows in U.S. dropped from 24 million in 1950 to 11 million in 1978. (Transparency 5)
      c. Total milk production remained fairly stable.

   3. Also important in beef, used some in swine and horses.

Student Learning Activities:

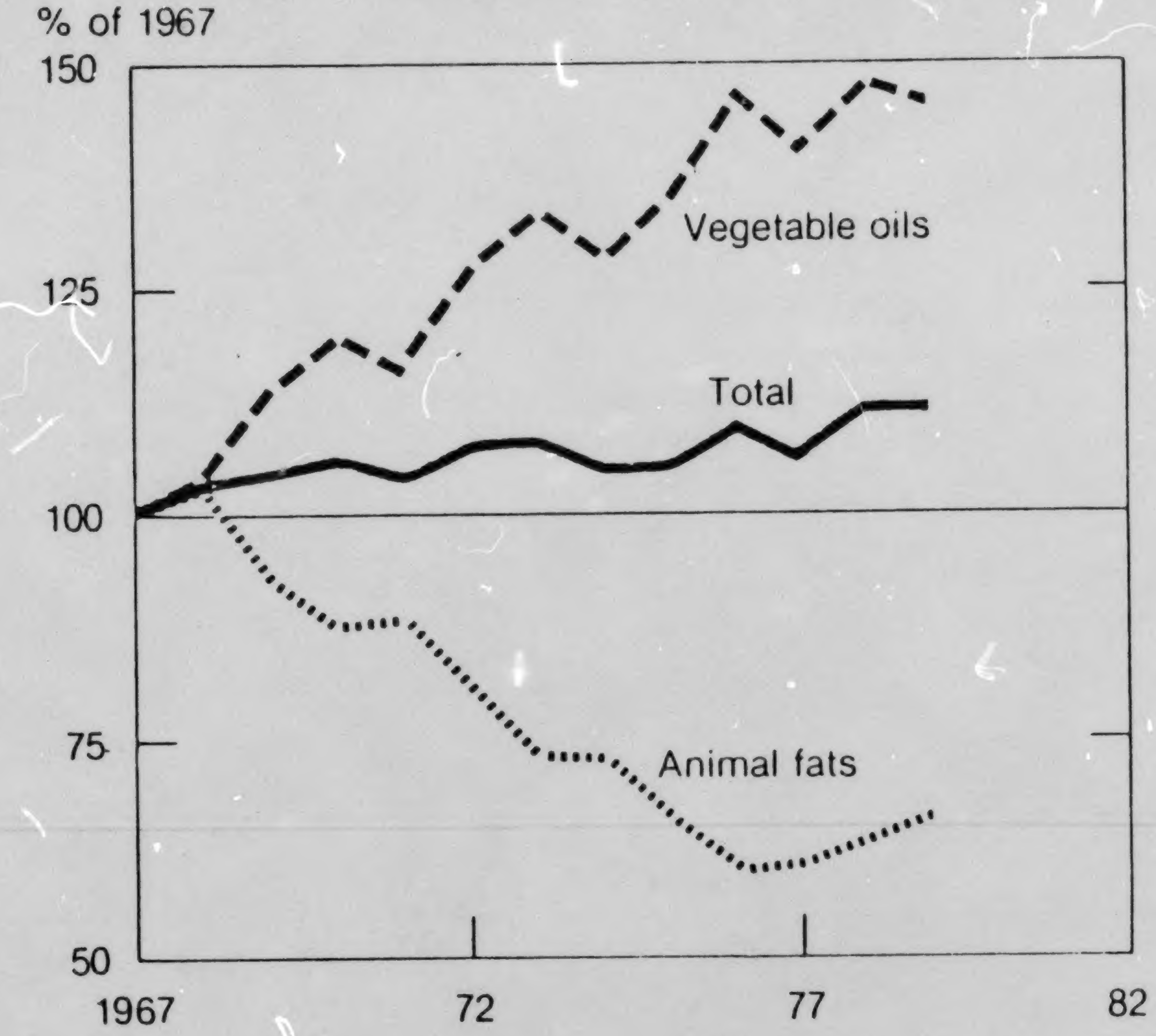
1. Show either film Horses! or On The Fifth Day available from the North Dakota State Film Library, Fargo, North Dakota.

2. Have students interview older farmers and ranchers in the community to find out how the livestock have changed in terms of size, appearance, quality, and quantity. Have each report (written or oral) on their findings. Books on local history may be another source of information.

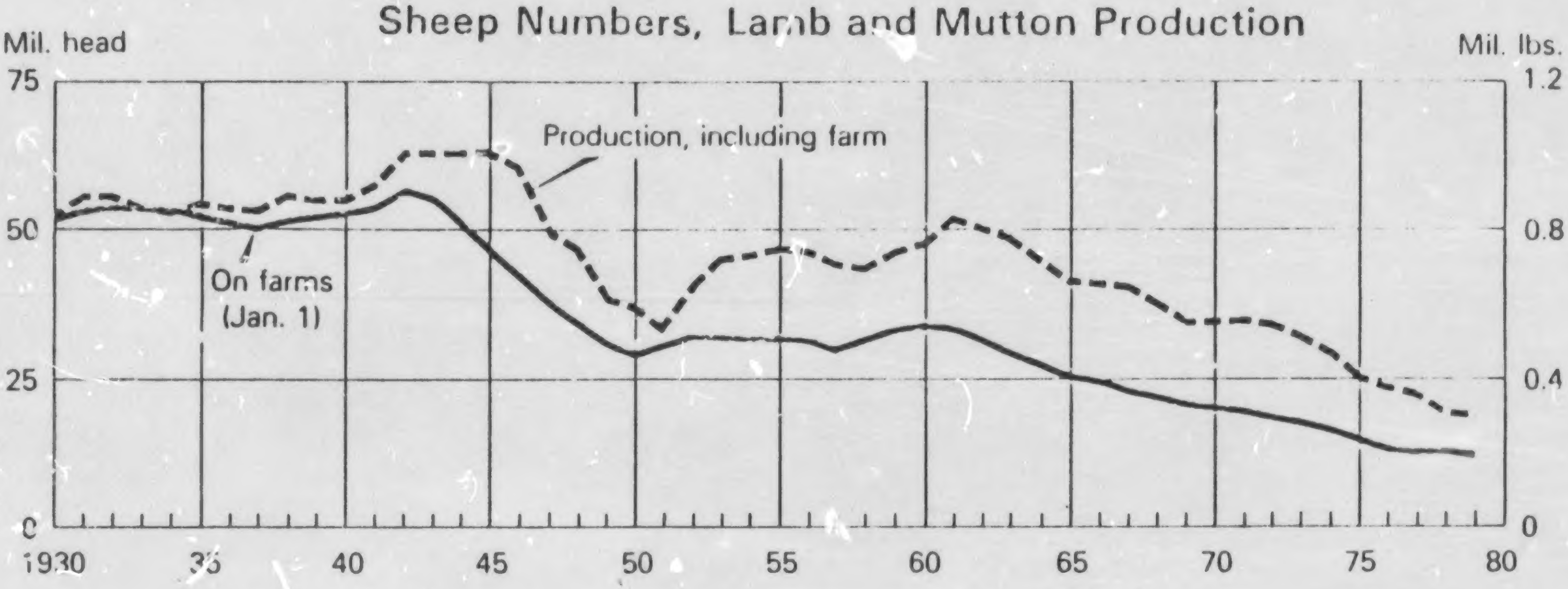
NUMBER OF HORSES ON FARMS IN U.S.

	MILLION
1880	10.9
1890	15.7
1900	17.9
1910	20.0
1920	20.1
1930	13.7
1940	10.4
1950	5.5
1960	3.1

Per Capita Consumption of Fats and Oils



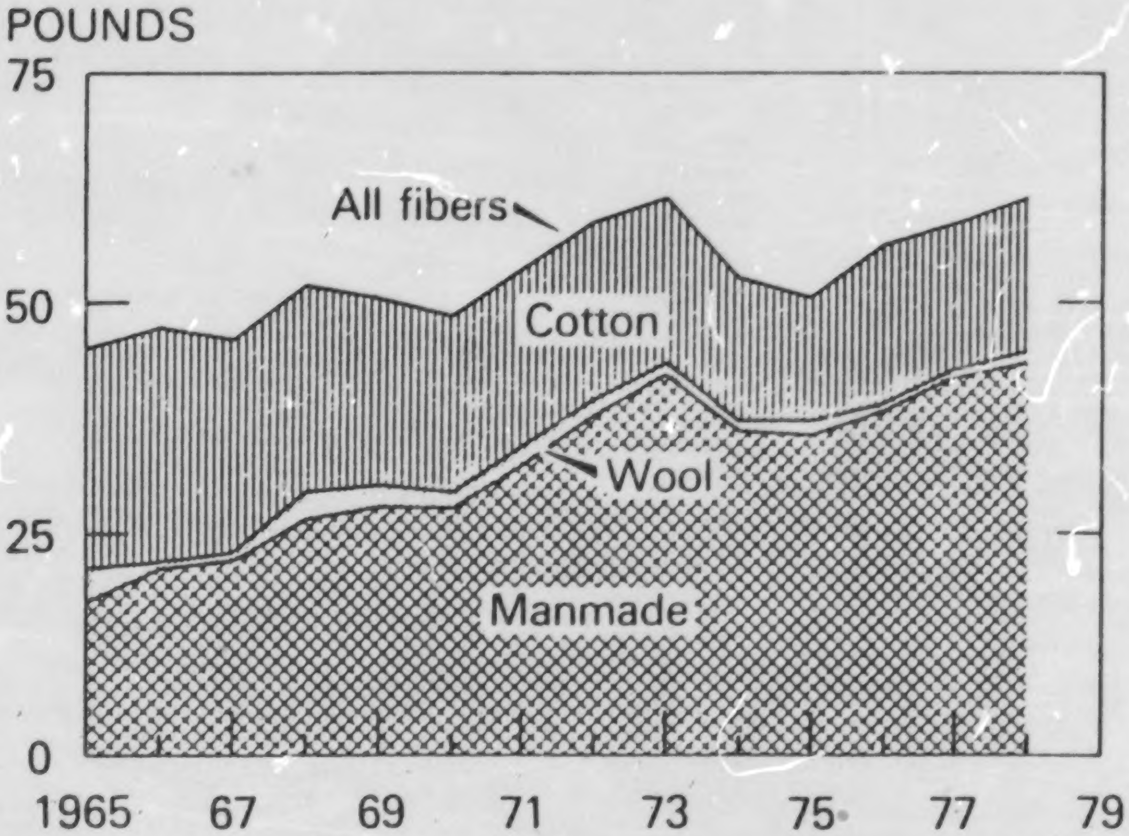
Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.



Sheep Numbers, Lamb and Mutton Production

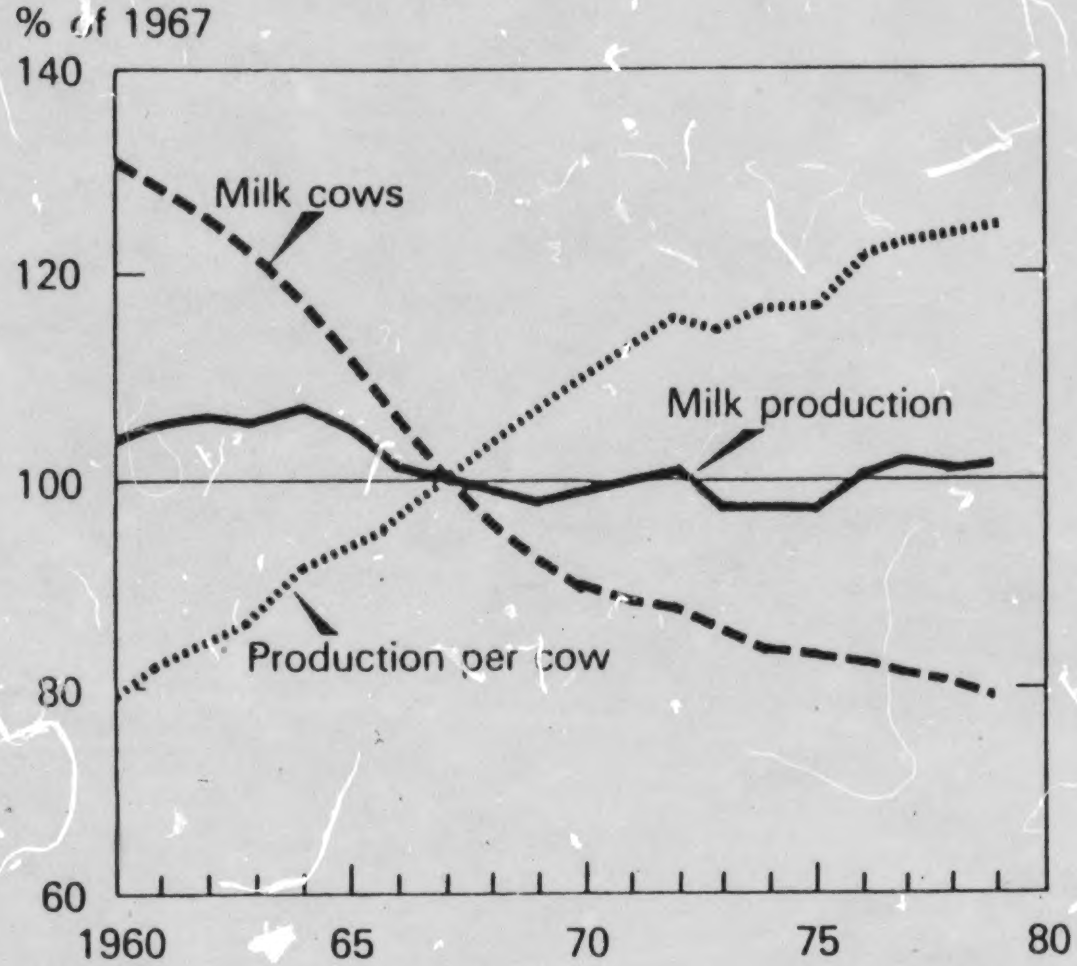
Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

Per Capita Domestic Consumption of Fibers



Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

Milk Production, Number of Cows, And Milk Per Cow



Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

Job 2: Recognizing the Importance of the Livestock Industry.

Objectives:

The objectives of this job shall be met at a level predetermined by the instructor. The manner in which they are evaluated shall also be determined by the instructor.

Upon completion of this job, the student should be able:

1. to recognize the worldwide importance of livestock.
2. to recognize the importance of livestock to the U.S.
3. to recognize the importance of livestock to N.D.
4. to recognize the importance of livestock to his/her local area.

Guide Questions:

1. Why are livestock important in world food production?
2. Why is livestock production important to the U.S.?
3. Why is livestock production important to N.D.?
4. Why is livestock production important locally?

References:

Ensminger, M. E. Animal Science. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1977.

Johnson, John N. Livestock Production. Division of Independent Study, State University Station, Fargo, North Dakota, 1973.

1979 Handbook Of Agricultural Charts. United States Department of Agriculture, Agricultural Handbook Number 561, Washington, D.C., October 1979.

North Dakota Agricultural Statistics 1980. North Dakota Crop and Livestock Reporting Service, North Dakota State University Agricultural Experiment Station and the U.S. Department of Agricultural Economics, Statistics and Cooperatives Service, Fargo, North Dakota, May 1980.

Interest Approach:

Ask the students to name foods and other products they would not have if there were no livestock. Make sure they include some by-products.

Key Facts:

I. Worldwide Importance of Livestock Production.

A. Many products and services from livestock.

1. Food.

a. Most are high in good quality protein along with other nutrients.

1) Meat.
2) Milk and dairy products.
3) Eggs.

b. Animal fats such as lard are not as important as they once were.

2. Fiber and clothing.

a. Wool is one of the best fibers available.

1) Excellent insulator.
2) Absorbs moisture away from the body.
3) Strong and durable.
4) Elastic.
5) Practically nonflammable.

b. Leather has a wide variety of uses.

1) Shoes.
2) Gloves.
3) Coats.
4) Luggage.

c. Goose down is unsurpassed as an insulating material.

3. Animals still used for draft in many underdeveloped countries.

4. Recreational uses of horses has increased greatly in recent years.

B. Livestock utilize plants which are not usable by man.

1. Many people believe we should raise less livestock.

a. They compete with man for food from plants.
b. Grain fed directly to man will feed 5 times as many than if fed to livestock first.

2. Livestock use a variety of feedstuffs not usable by man.

    a. Graze areas which are not fit for cultivation.

        1) Mountainous areas.
        2) Arid regions.
        3) Wetlands.

    b. By-products of crop processing.

        1) Beet pulp.
        2) Distillers' by-products.
        3) Meal from oil crops.
        4) Screenings.
        5) Plant parts left from harvest such as corn stalks.

    c. Low quality roughages.

3. Many underdeveloped countries need livestock to utilize the land.

    a. Large amount of tillable land per person.
    b. Do not have equipment or technology to till the land.
    c. Require livestock to graze.

C. Livestock are important in providing adequate protein in diets.

1. Animal protein is much more beneficial than plant protein.

2. Two thirds of the world's population lack good quality protein. (Transparency 1)

3. The most serious result of protein malnutrition is in infant mortality, which is as high as 40 percent in some countries.

4. Ruminants, livestock with 4 stomach compartments, can convert low quality protein and other forms of nitrogen into protein, which man cannot do.

D. Future importance of livestock.

1. Cattle and sheep will remain important as they are ruminants and can utilize low quality feeds.

2. Hogs and poultry, although they utilize feed which is in direct competition with man, will be important because they are very efficient with a short production cycle.

3. Fish and rabbit production may become important as they are also very efficient and have short production cycles.

II. Importance of the Livestock Industry in the U.S.

A. Livestock production has increased greatly.

1. Animals are the largest users of land in the nation. (Transparency 2)

2. The U.S. has the largest number of beef cattle of the major producing countries. (Transparency 3)

3. Formerly 1 head of cattle per person in the U.S., now 1 or less for every two persons.

4. Imports of beef small compared to production, and is usually of lower quality. (Transparency 4)

5. Meat packing is one of the 10 largest industries in the U.S.

6. Horse numbers in the U.S. have increased.

    a. Horse racing is the number one spectator sport, mainly due to track betting.
    b. Horses are the number one 4-H project in the U.S.

B. Consumption of animal products has increased since 1967, but not as fast as crop consumption. (Transparency 5)

1. Poultry consumption has increased most rapidly. (Transparency 6)

2. U.S. has the second highest consumption of meat of the major producing countries. (Transparency 7)

C. Export of animal products is not as great as crop products but has increased. (Transparency 8)

1. Most of the exports are in lard and tallow, hides and skins, and other by-products. (Transparency 9)

2. Most of the red meat exported is high quality beef and veal.

III. Importance of the Livestock Industry to North Dakota.

A. Livestock production is one of the state's largest industries.

1. One fourth of farm receipts is from livestock and products. (1978)

2. 17 percent of farm receipts is from cattle and calves. (1978)

1.

2.

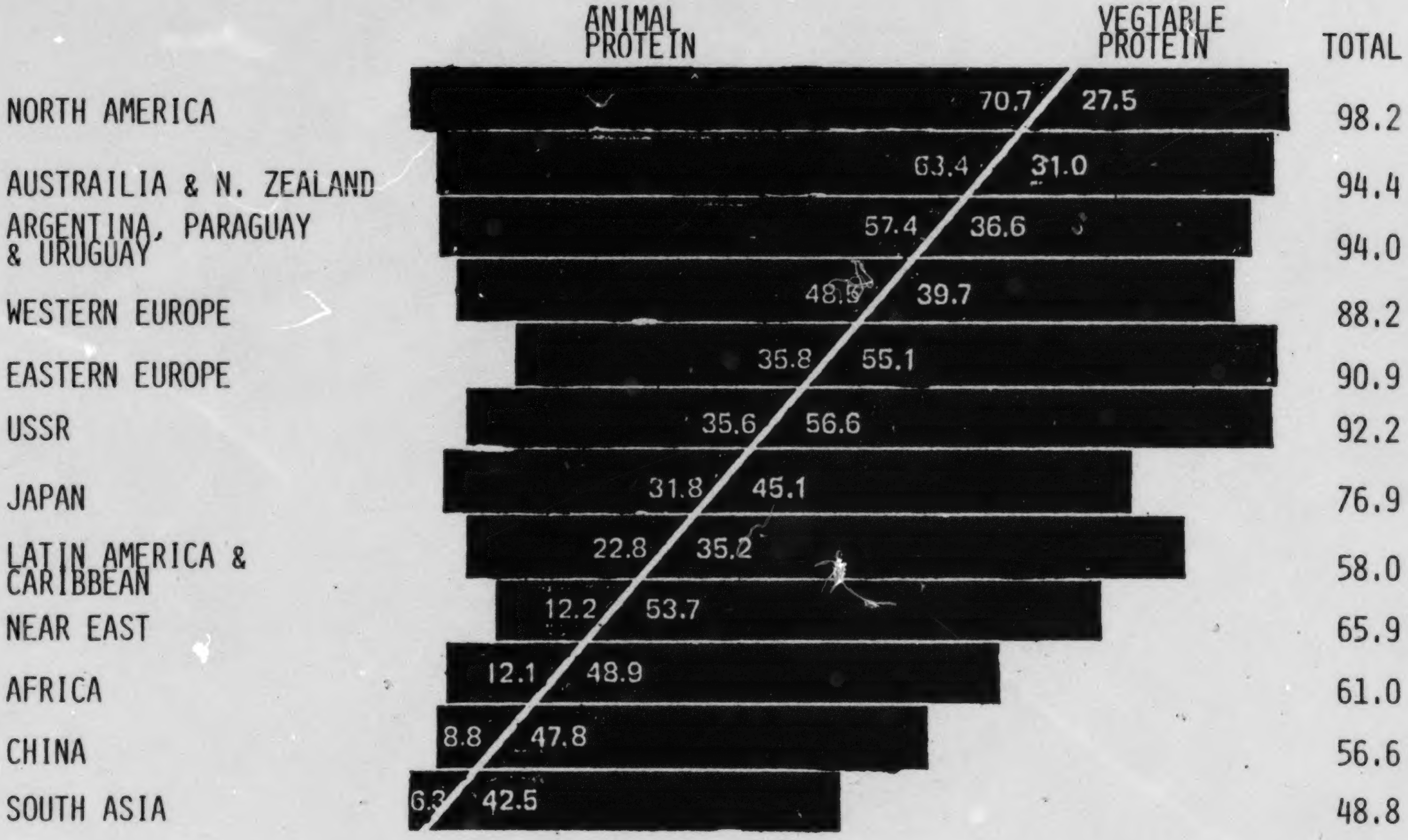
3.

4.

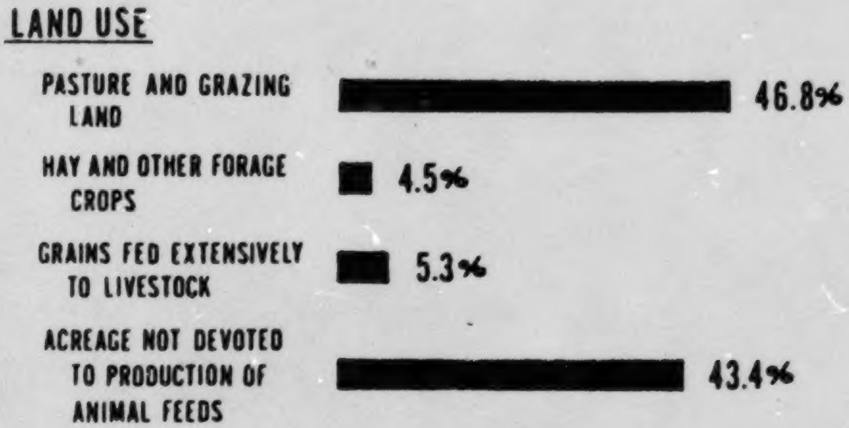
Student Learning Activities:

1. Show the film Rangelands: An American Heritage, available from the North Dakota Film Library, Fargo, North Dakota.

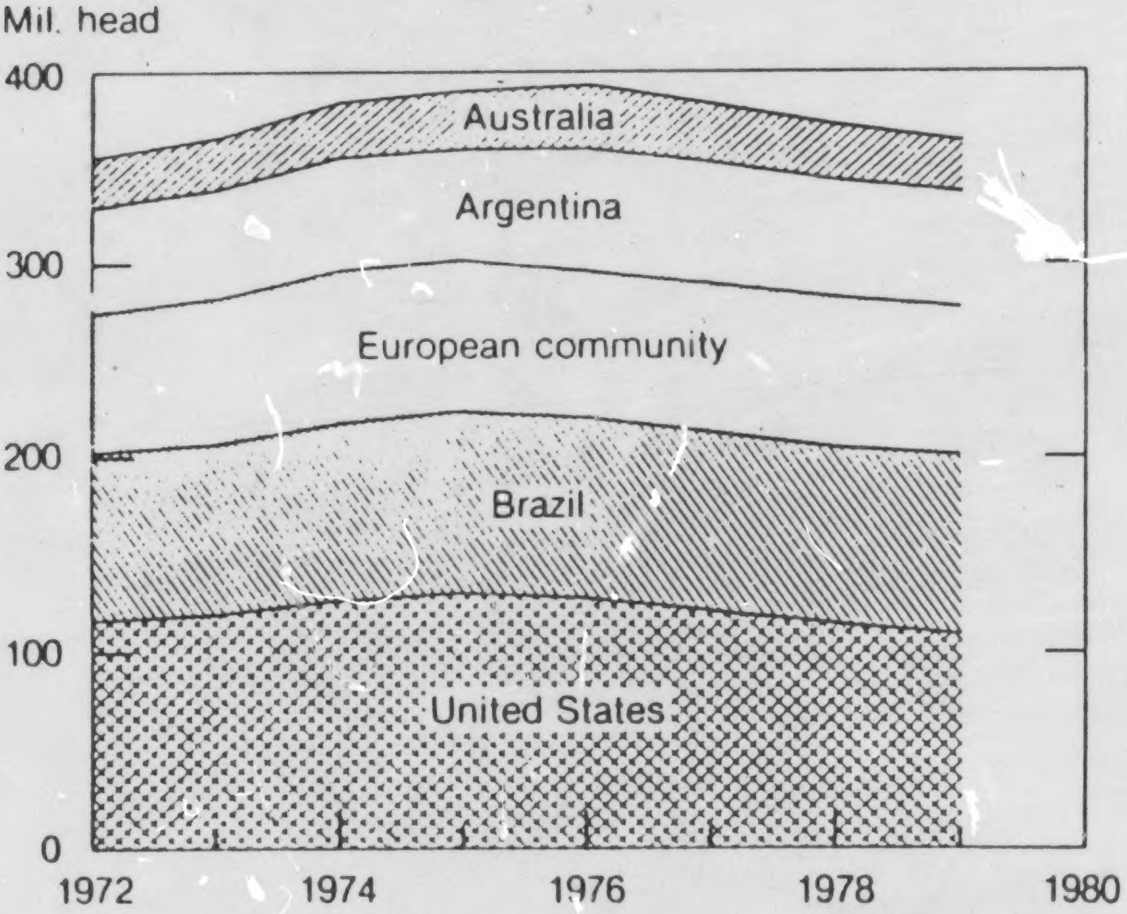
AVERAGE GRAMS PROTEIN CONSUMPTION
PER CAPITA PER DAY



TOTAL LAND AREA OF THE UNITED STATES 1,897 MILLION ACRES

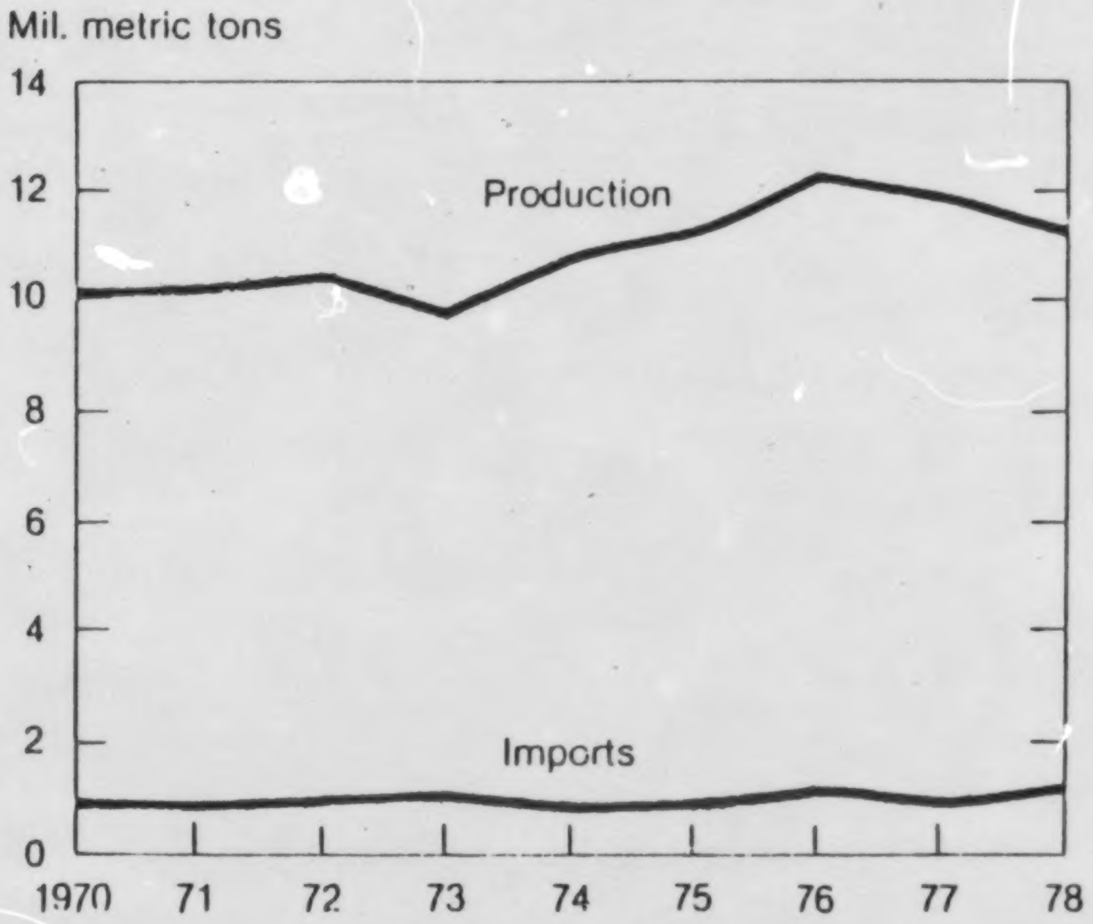


Cattle Numbers in Major Beef Producing Countries



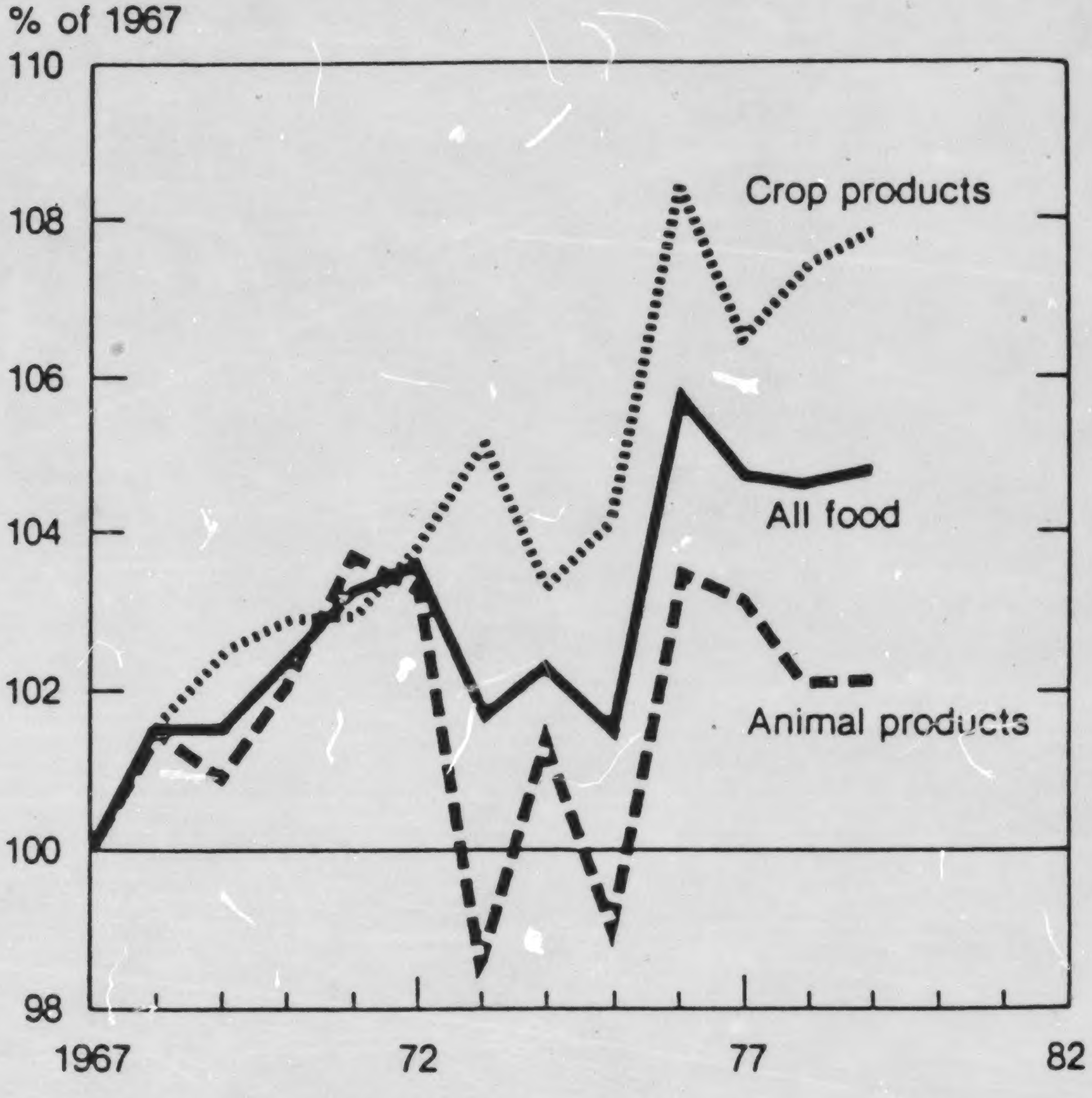
Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

U.S. Beef and Veal Production and Imports



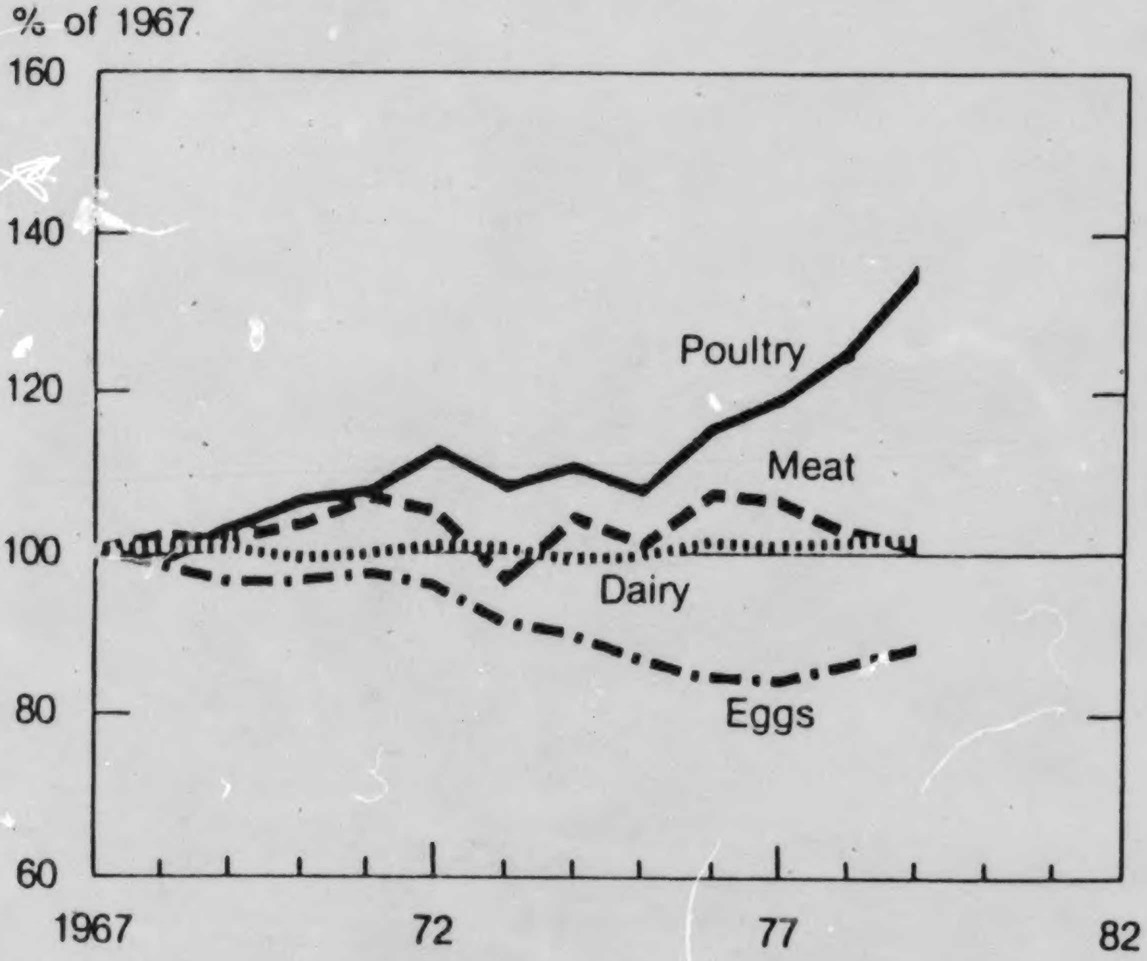
Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

Per Capita Food Consumption



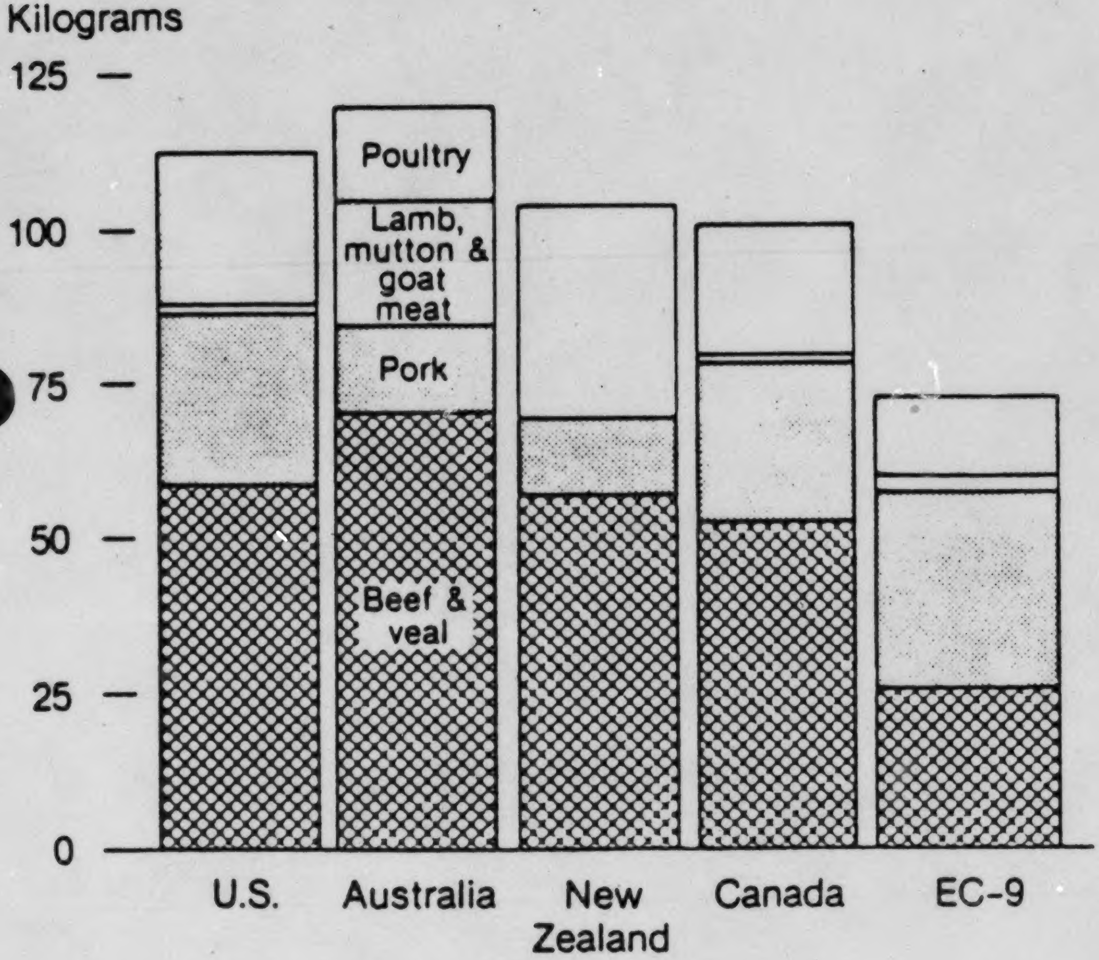
Source: 1979 Handbook of Agricultural Charts. United States Department of Agriculture.

Per Capita Consumption of Selected Livestock Products



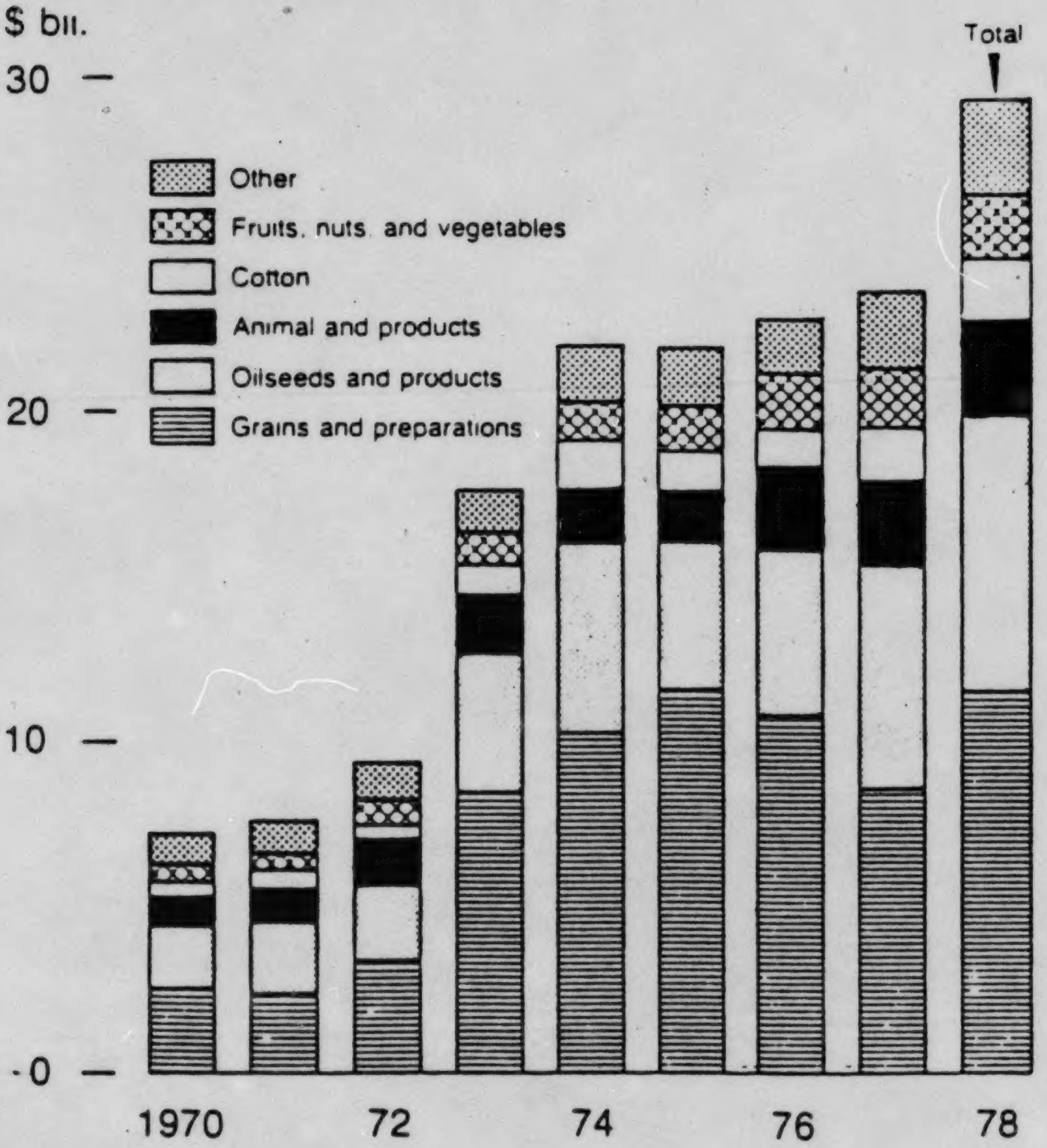
Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

Per Capita Meat Consumption In Major Producing Countries



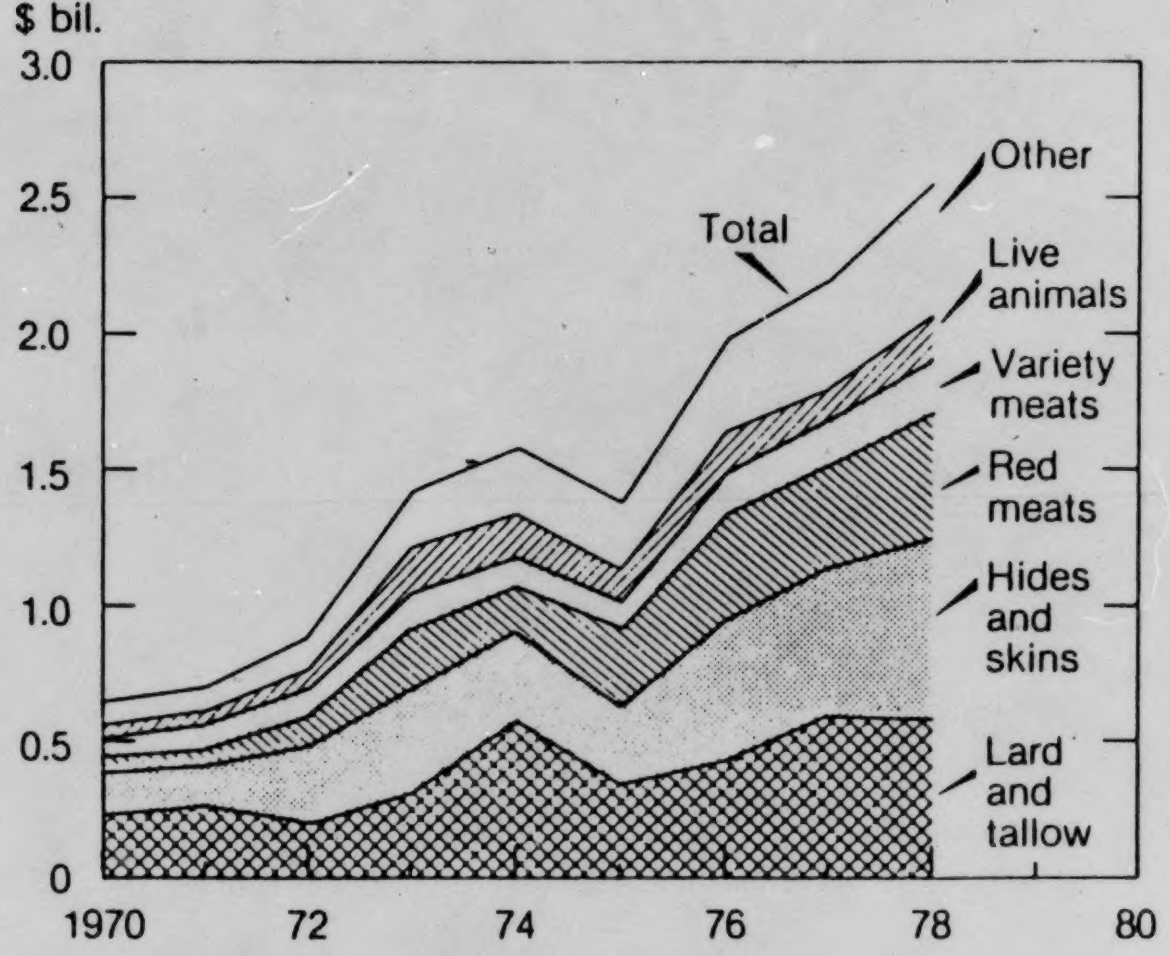
Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

U.S. Agricultural Exports: Value by Commodity Group



Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

U.S. Exports of Livestock Products

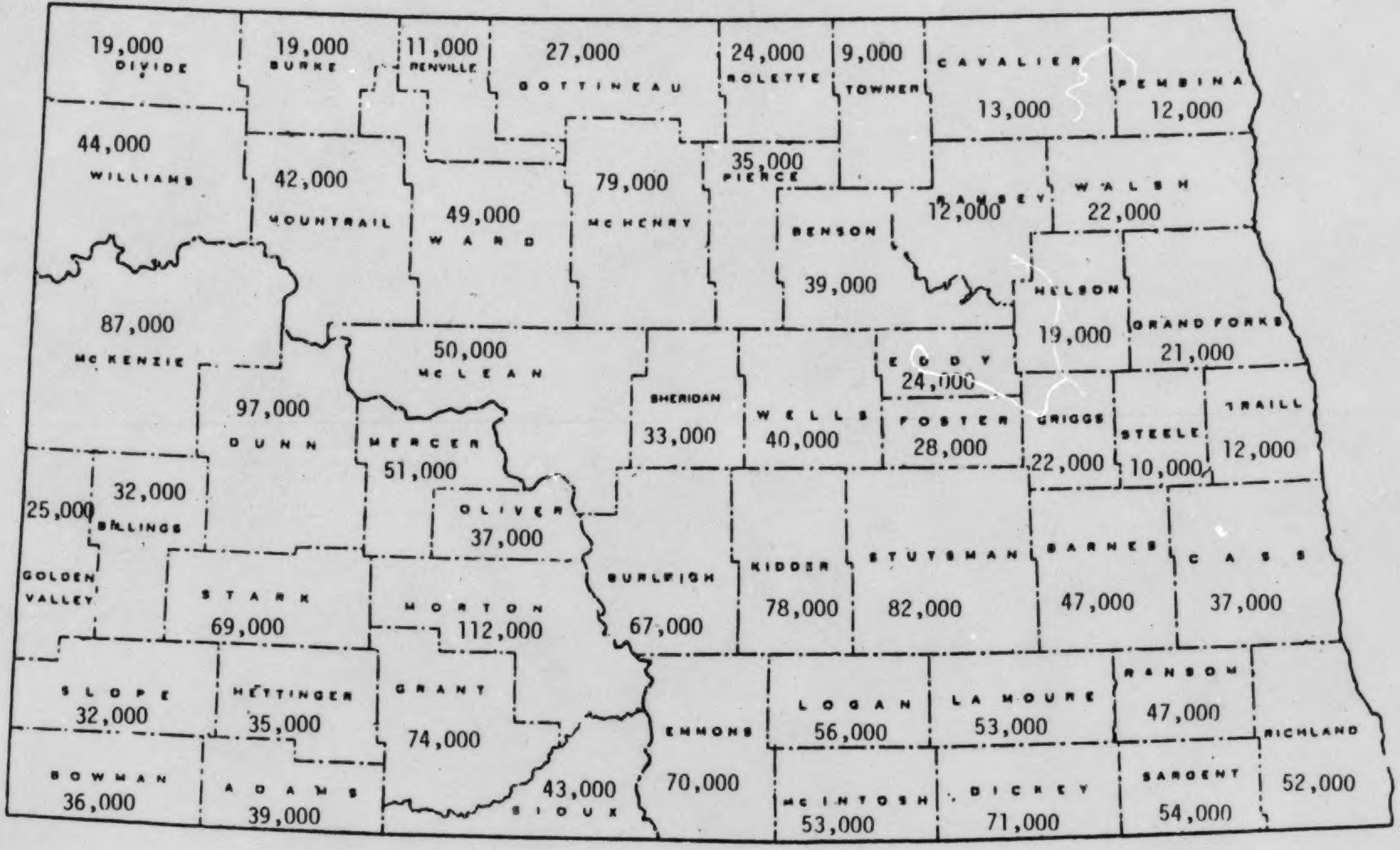


Source: 1979 Handbook Of Agricultural Charts. United States Department of Agriculture.

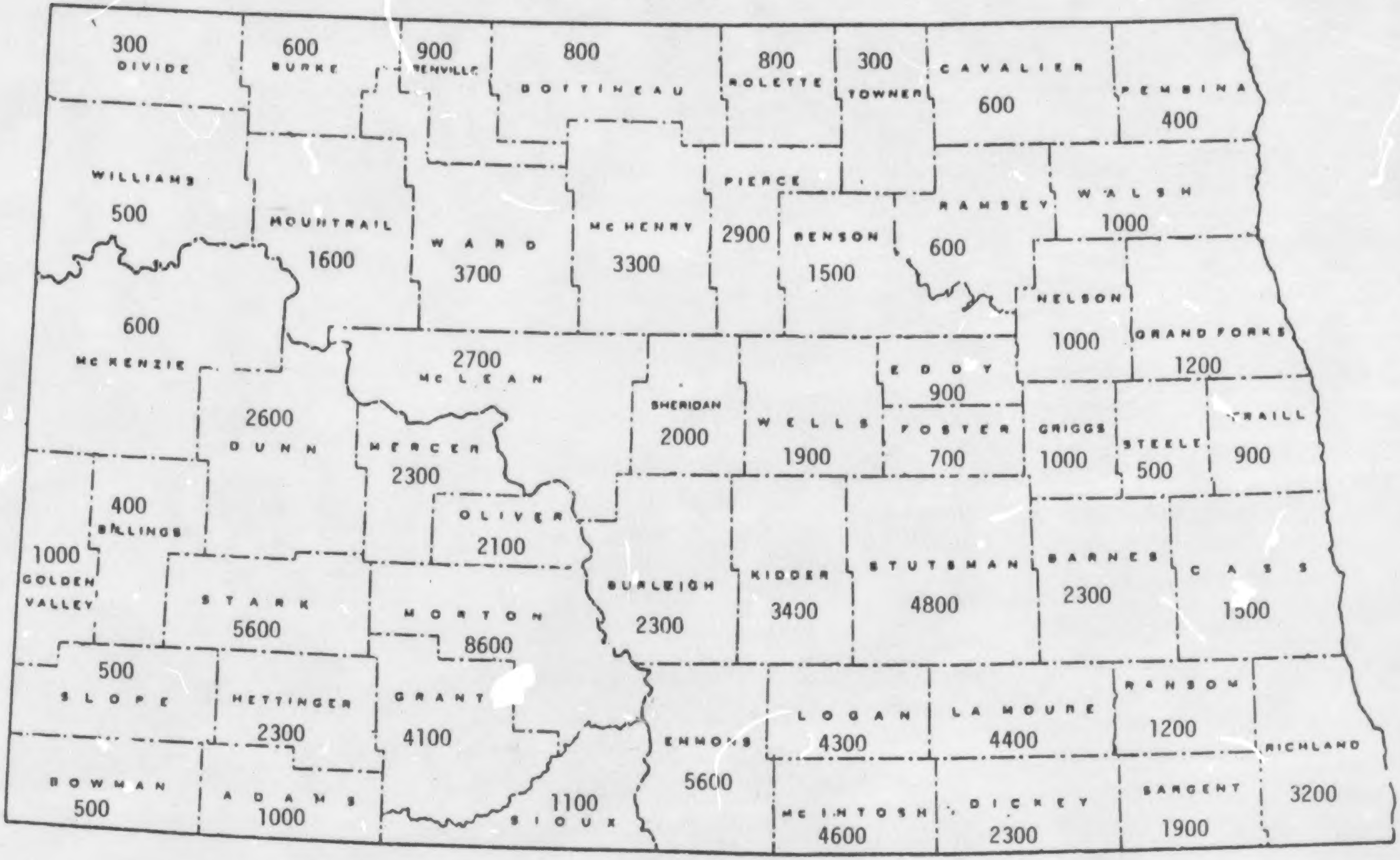
NORTH DAKOTA'S RANK IN PRODUCTION AMONG STATES
1979

HONEY PRODUCTION	2ND
AMERICAN CHEESE	7TH
LAMB CROP	12TH
CALF CROP	14TH
WOOL PRODUCTION	16TH
CREAMERY BUTTER	19TH
TURKEYS RAISED	22ND
PIG CROP	24TH

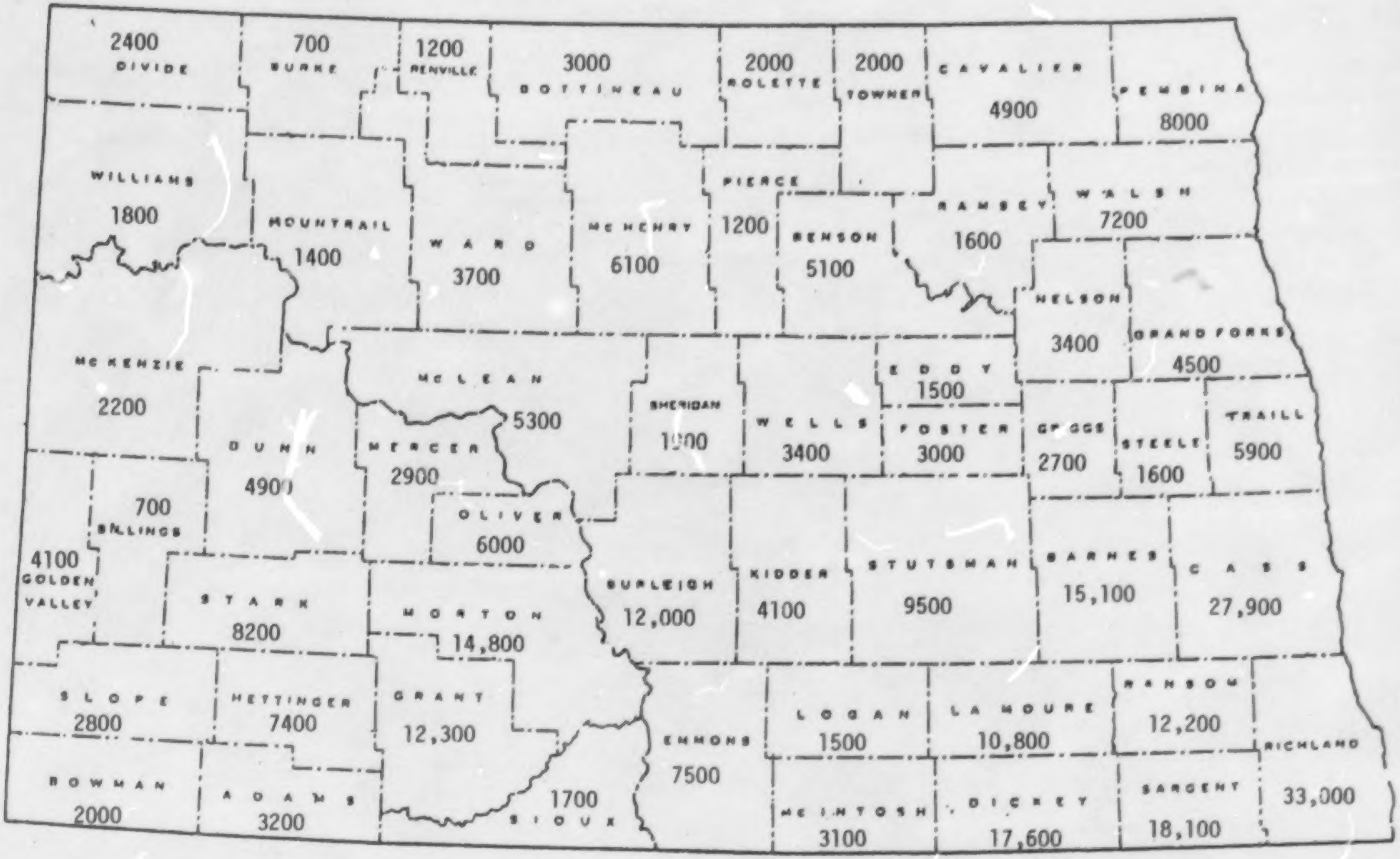
ALL CATTLE ON FARMS BY COUNTY
5-YEAR AVERAGE


19,000
DIVIDE
19,000
BURKE
11,000
RENVILLE
27,000
BOTTINEAU
24,000
ROLETTE
9,000
TOWNER
CAVALIER
13,000
PEMBINA
12,000
44,000
WILLIAMS
42,000
MOUNTRAIL
49,000
WARD
79,000
McHENRY
35,000
PIERCE
BENSON
39,000
RAMSEY
12,000
WALSH
22,000
NELSON
19,000
GRAND FORKS
21,000
87,000
McKENZIE
50,000
McLEAN
EDDY
24,000
97,000
DUNN
MERCER
51,000
SHERIDAN
33,000
WELLS
40,000
FOSTER
28,000
GRIGGS
22,000
STEELE
10,000
TRAILL
12,000
25,000
32,000
BILLINGS
OLIVER
37,000
GOLDEN VALLEY
STARK
69,000
MORTON
112,000
BURLEIGH
67,000
KIDDER
78,000
STUTSMAN
82,000
BARNES
47,000
CASS
37,000
SLOPE
32,000
HETTINGER
35,000
GRANT
74,000
EMMONS
70,000
LOGAN
56,000
LA MOURE
53,000
RANSOM
47,000
RICHLAND
52,000
BOWMAN
36,000
ADAMS
39,000
43,000
SIOUX
McINTOSH
53,000
DICKEY
71,000
SARGENT
54,000

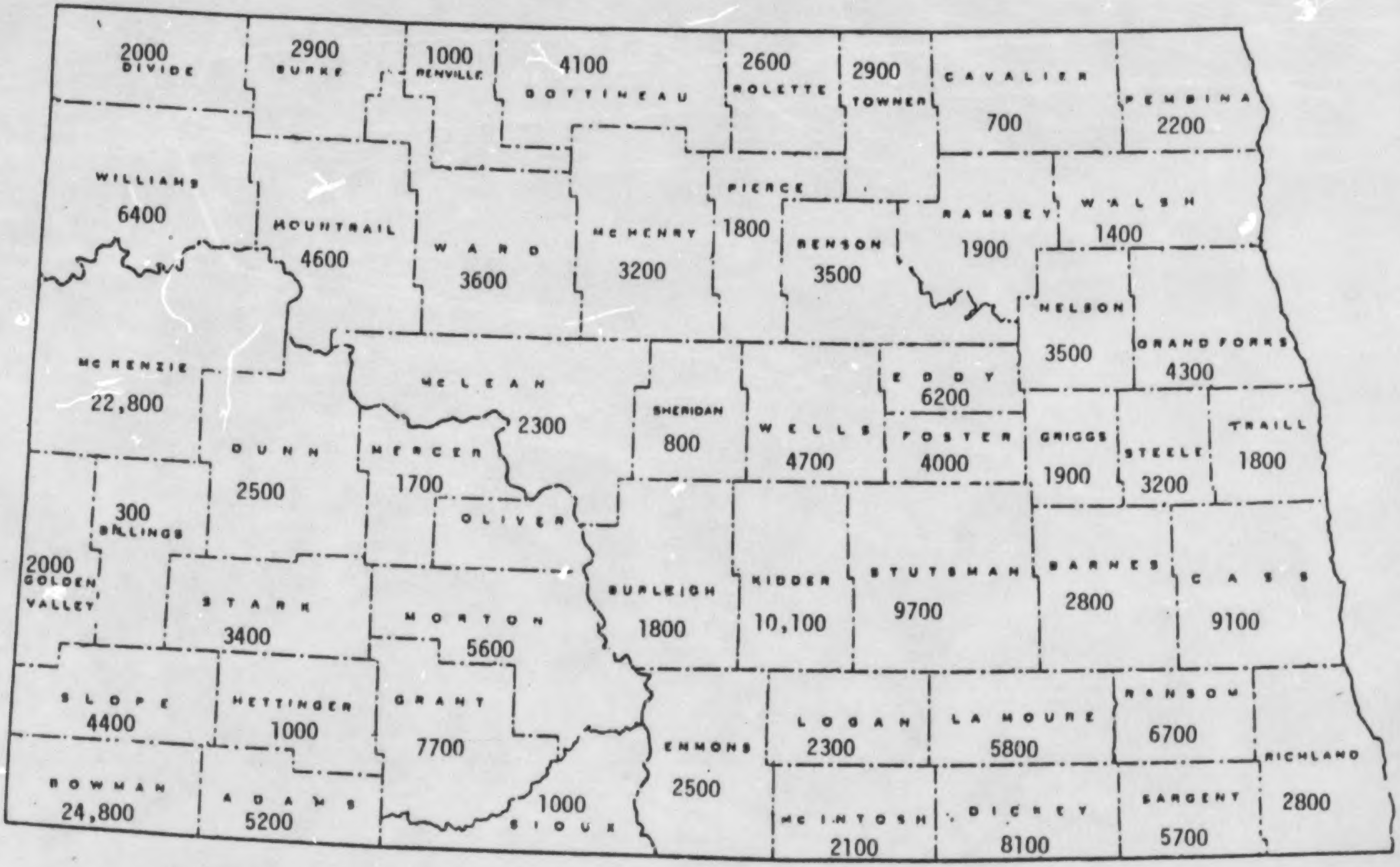
MILK COWS ON FARMS BY COUNTY
5-YEAR AVERAGE


300
DIVIDE
600
BURKE
900
RENVILLE
800
BOTTINEAU
800
ROLETTE
300
TOWNER
CAVALIER
600
PEMBINA
400
WILLIAMS
500
MOUNTRAIL
1600
WARD
3700
McHENRY
3300
PIERCE
2900
BENSON
1500
RAMSEY
600
WALSH
1000
600
McKENZIE
2700
McLEAN
NELSON
1000
GRAND FORKS
1200
SHERIDAN
2000
WELLS
1900
EDDY
900
FOSTER
700
GRIGGS
1000
STEELE
500
TRAILL
900
2600
DUNN
MERCER
2300
400
BILLINGS
OLIVER
2100
1000
GOLDEN
VALLEY
STARK
5600
MORTON
8600
BURLEIGH
2300
KIDDER
3400
STUTSMAN
4800
BARNES
2300
CASS
1500
500
SLOPE
HETTINGER
2300
GRANT
4100
EMMONS
5600
LOGAN
4300
LA MOURE
4400
RANSOM
1200
RICHLAND
3200
BOWMAN
500
ADAMS
1000
1100
SIOUX
McINTOSH
4600
DICKEY
2300
SARGENT
1900

ALL HOGS ON FARMS BY COUNTY
5-YEAR AVERAGE


2400
DIVIDE
700
BURKE
1200
RENVILLE
3000
BOTTINEAU
2000
ROLETTE
2000
TOWNER
CAVALIER
4900
PEMBINA
8000
WILLIAMS
1800
MOUNTRAIL
1400
WARD
3700
McHENRY
6100
PIERCE
1200
BENSON
5100
RAMSEY
1600
WALSH
7200
NELSON
3400
GRAND FORKS
4500
McKENZIE
2200
McLEAN
5300
SHERIDAN
1900
WELLS
3400
EDDY
1500
FOSTER
3000
GRIGGS
2700
STEELE
1600
TRAILL
5900
DUNN
4900
MERCER
2900
OLIVER
6000
700
BILLINGS
4100
GOLDEN VALLEY
STARK
8200
MORTON
14,800
BURLEIGH
12,000
KIDDER
4100
STUTSMAN
9500
BARNES
15,100
CASS
27,900
SLOPE
2800
HETTINGER
7400
GRANT
12,300
EMMONS
7500
LOGAN
1500
LA MOURE
10,800
RANSOM
12,200
RICHLAND
33,000
BOWMAN
2000
ADAMS
3200
1700
SIOUX
McINTOSH
3100
DICKEY
17,600
SARGENT
18,100

ALL SHEEP ON FARMS BY COUNTY
5-YEAR AVERAGE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WILLIAMS
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MOUNTRAIL
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WARD
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GRIGGS
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STEELE
3200
TRAILL
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DUNN
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MERCER
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OLIVER
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BILLINGS
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GOLDEN VALLEY
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MORTON
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BURLEIGH
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KIDDER
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STUTSMAN
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HETTINGER
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GRANT
7700
EMMONS
2500
LOGAN
2300
LA MOURE
5800
RANSOM
6700
RICHLAND
2800
BOWMAN
24,800
ADAMS
5200
1000
SIOUX
McINTOSH
2100
DICKEY
8100
SARGENT
5700

Job 3: Understanding the Functioning of the Livestock Industry.

Objectives:

The objectives of this job shall be met at a level predetermined by the instructor. The manner in which they are to be evaluated shall also be determined by the instructor.

Upon completion of this job, the student shall be able:

1. to list types and functions of producers.
2. to list types of sales and service businesses and organizations.
3. to list how and where livestock is marketed.
4. to list how livestock and products are processed.

Guide Questions:

1. How does production take place in the beef industry?
2. How does production take place in the dairy industry?
3. How does production take place in the swine industry?
4. How does production take place in the sheep industry?
5. How does production take place in the poultry industry?
6. What sales and service businesses and organizations serve the livestock industry?
7. How are most livestock marketed and transported?
8. How are livestock and products processed?

References:

Bundy, Clarence E. and Ronald Diggins. Livestock and Poultry Production. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968.

Ensminger, M. E. Animal Science. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1977.

Johnson, John N. Livestock Production. Division of Independent Study, State University Station, Fargo, North Dakota, 1973.

1979 Handbook of Agricultural Charts. United States Department of Agriculture, Agricultural Handbook Number 561, Washington, D.C., October 1979.

Romans, John R. and P. Thomas Ziegler. The Meat We Eat. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1974.

Stone, Archie A. Careers in Agribusiness And Industry. Danville, Illinois: The Interstate Printers & Publishers, 1970.

Interest Approach:

Ask the students why most farms don't have all types of livestock, beef and dairy cattle, hogs, sheep, poultry, and horses, like farms used to 50 - 100 years ago. Point out how the industry has changed due to increased specialization and transportation.

Key Facts:

I. Production in the Beef Industry.

  A. Cow-calf producer.

    1. Raises calves to be fattened for slaughter.

    2. Normal production cycle in North Dakota.

      a. Cows are mated to bulls sometime from June through August.
      b. Cows calve the following spring, March through May, just over 9 months after breeding or 283 days.
      c. Calves are weaned in the fall around October or November.
      d. Calves are dehorned, castrated, and/or vaccinated, usually around the time weaned.
      e. Calves are sold anywhere from 6 to 12 months old.

    3. Numerous methods of selling.

      a. Consignment auction.
      b. Terminal market.
      c. Direct to feeder.
      d. Order buyer.

    4. Must have plenty of pasture and hay land.

    5. Most breeders buy bulls, but raise most of replacement heifers. Crossbreeding is often used.

  B. Cattle feeder.

    1. Feeds calves and/or yearlings until ready for slaughter.

    2. Buys cattle raised by the cow-calf operator and puts them in a feedlot.

3. Cattle will generally be fed mostly roughages until grown enough to fatten.

4. When the cattle have grown enough to fatten, 320 to 360 kg (700 - 800 lbs.), they are fed mostly grains.

5. Inexpensive supply of feed important to the feeder.

6. Steers go to market at from 450 to 520 kg (1000 - 1150 lbs.), heifers from 340 to 430 kg (750 - 950 lbs.).

7. Most are sold at terminal markets, some direct to the packer.

C. Purebred breeder.

1. Similar to cow-calf operator.
    - a. Maintains a breeding herd.
    - b. Usually calves in the spring.
    - c. Must have plenty of pasture and hay land.
    - d. Buys bulls, but raises own replacement heifers usually.

2. Differences.
    - a. Cattle are sold to cow-calf or other purebred operators for breeding stock.
    - b. Cattle are all registered purebreds.
    - c. Keeps extensive pedigree and production records.

3. Bulls sold either as yearlings or two year olds.

4. Heifers usually sold as yearlings, may be bred or open.

5. Usually have an annual auction sale, may sell by private treaty.

II. Production in the Dairy Industry.

A. Milking operation.

1. Maintains a cow herd for milking.

2. Most operators milk twice daily.

3. Production cycle.
    - a. After calving, the calf is allowed to nurse for 4 to 5 days.
    - b. Calf is then taken away from the cow and fed milk, milk replacer, a calf starter ration, or put on a nurse cow, depending on what the calf will be used for.

        1) Milking.
        2) Breeding.
        3) Slaughter.

    c. Cow is milked for about 10 months during which time she will have been bred.
    d. After 10 months, the cow is allowed to "dry up" by stopping milking.

        1) Allows cow to regain weight.
        2) Rests up before calving.

    e. Cow goes through a 60 day dry period.
    f. The cow calves, restarting the cycle, preferably 12 months later. The process of restarting the cycle is called freshening.

4. Cows may be freshened any time during the year.

    a. Producer may like to spread cows out during the year to keep production steady.
    b. Producer may freshen all at once to have more free time for other duties.
    c. Cows freshened in the fall are generally higher producing.

5. Replacement heifers often come from own herd.

6. Most producers keep production records on each cow.

7. Large amounts of high quality forage are needed.

8. Labor requirements are higher than most other livestock enterprises.

9. Must have facilities and equipment for handling milk.

B. Purebred breeders.

1. Usually in combination with a milking operation.

2. Bull and heifer calves are registered and raised for breeding or milking purposes.

3. Must have pedigree records and extensive production records.

4. Sells bulls and heifers in same manner beef purebred breeder does.

III. Production in the Swine Industry.

A. Three types of enterprises similar to the beef industry.

1. Farrowing operation - raises feeders.

2. Feeder operation - raises hogs till market.

3. Purebred operation - raises breeding stock.

B. Farrowing operation.

1. Production cycle.

   a. Usually two litters per year.
   b. Litter sizes average from 6 to 12.
   c. Pigs usually nurse from 4 to 6 weeks.
   d. During this time, they will have their teeth and tails clipped, be vaccinated and receive other shots. Castration is often done at this time also.
   e. The sow will be bred approximately 1 or 4 weeks after weaning.
   f. In just under 4 months after breeding, 114 days, she will farrow again.
   g. The production cycle can be shortened or lengthened by when pigs are weaned.

2. Most farrowing is done in confinement, in small pens or crates indoors.

3. Feeder pigs are started on high protein feed after weaning and sold at about 17 kg (40 lbs.).

4. Feeders usually sold by private treaty or at a feeder pig auction.

5. Replacement gilts usually selected from the producer's own feeder pigs. Boars are usually bought from purebred breeders.

6. Crossbreeding very common.

C. Hog feeder.

1. Buys feeder pigs and feeds until market weight, from 85 to 110 kg (190 - 240 lbs.).

2. Hogs often fed in confinement.

3. Ration is primarily feed grains. An inexpensive source is important.

4. A fast growing hog will reach market after about 120 days of feeding.

5. Hogs are generally put on a self-feeder and allowed to eat as much as desired.

6. Market hogs usually sold at a terminal market or direct to a packer.

7. Many operations combine farrowing and finishing.

D. Purebred breeder.

1. Similar to beef purebred breeder.

2. Boars are sold anywhere from weaning to 18 months, most are sold at 6 to 8 months.

3. Gilts are sold anywhere from weaning to just over a year, when they would likely be sold as bred gilts.

4. Annual production sales not as common as with cattle. Mostly sold by private treaty to avoid spreading diseases.

IV. Production in the Sheep Industry.

A. Three types of producers, similar to beef and swine.

1. Lambing operation.

2. Feeding operation.

3. Purebred operation.

4. Some may combine more than one.

5. Sheep on range used more for wool, meat is more important in farm flocks.

B. Lambing operation.

1. Production cycle.

a. Most breeds of sheep have a breeding season which falls sometime between December and April.

1) Varies somewhat between breeds.
2) Only time when ewes will mate.

b. Ewe rations are usually increased about 2 weeks before breeding, called flushing.

1) Earlier lambing.
2) Increase chance of twins.

c. Ewes lamb from 144 to 152 days after breeding, about 5 months.
d. A good producer will be able to have twinning in about half of the flock.
e. Lambs are castrated and/or docked at 1 to 2 weeks old.
f. Time of weaning will depend on number of lambs, range conditions, milking ability and method of marketing.
g. Most sheep are sheared in late spring or early summer.
h. Lambs may be sold to feeders or for slaughter depending on size and condition.
i. Must have sufficient pasture land. Sheep can utilize poorer quality range plants.

C. Lamb feeder.

1. Buys lambs at about 27 kg (60 lbs.).

2. May fatten on roughage alone, or with grain.

3. After 3 to 4 months on feed, the lambs will be marketed at around 45 kg (100 lbs.).

4. Most are sold at a terminal market or direct to a packer.

D. Purebred breeder.

1. Similar to beef and swine purebred breeders.

2. Production cycle similar to lambing operation.

V. Production in the Poultry Industry.

A. Changed considerably from 20 years ago.

1. Each farm no longer raises a few for eggs and meat.

2. Highly specialized operations today have thousands of head.

B. Poultry refers to over 10,000 species of birds but chickens, turkeys and geese will be inferred by the term "poultry".

C. Two major types of production.

1. Laying hens.

a. Hens should lay at least 200 eggs per year.
b. Most are kept in confinement or caged.
c. Must be fed high protein rations.

2. Poultry feeder.

a. Most feeders buy chicks from a commercial hatchery.
b. Must also be fed high protein rations.

c. Confinement used extensively.
d. Broilers are usually marketed at 10 weeks weighing 1.5 kg (3 lbs.). Poults are marketed at 20 to 26 weeks and weigh from 7 to 11 kg (15-25 lbs.).
e. Most are sold directly to a processor.

VI. Sales and Service Businesses in the Livestock Industry.

A. Sales.

1. Feed.

2. Medicine.

3. Equipment.

B. Marketing services - persons who assist in marketing but do not actually purchase the livestock.

1. Commission salesmen.

2. Auctioneers.

C. Lending institutions.

1. Commercial banks.

2. Federal Land Bank.

3. Production Credit Association.

4. Farmers Home Administration.

5. Finance companies.

6. Credit unions.

D. Educational services.

1. May be provided by Cooperative Extension Service, Vocational Agriculture personnel, other professionals.

2. Services in many areas.

a. Animal nutrition.
b. Animal health.
c. Breeding systems.
d. Livestock selection.
e. Marketing.
f. Record keeping.

E. Other services.

1. Veterinarian.

2. Livestock technician.

   a. Dehorning.
   b. Castrating.
   c. Docking.
   d. Artificial insemination.
   e. Debeaking.

3. Sheep shearer.

VII. Marketing Livestock.

A. Terminal market.

1. Livestock are consigned to one of several commission firms who sell to buyers for a small fee.

2. May sell direct or by auction.

3. Most livestock sold are for slaughter. Some may be feeders, rarely for breeding purposes.

4. West Fargo has the only terminal market in North Dakota.

B. Auction market.

1. Similar to terminal market.

   a. Central place for buyers and sellers to get together.
   b. Seller does not take an active part in the sale.
   c. Fee is charged to the seller for the service.
   d. Sales firm does not buy or take possession of the livestock.

2. Differences.

   a. All livestock sold by auction.
   b. Usually a smaller market with only one selling firm.
   c. Wider variety of livestock sold.
   d. May be used by purebred breeders in a private sale.

C. Direct method.

1. Livestock are generally advertised for sale.

2. Requires greater marketing skills for the seller.

3. Used with all types of livestock.

4. Becoming very popular.

a. Feeder livestock sold to a feeder.
b. Slaughter livestock sold to a packer.
c. Breeding stock sold to a breeder.

D. Transporting livestock.

1. Most livestock are transported by truck and/or trailer.

2. Use of rail has decreased as roads were improved.

VIII. Processing Livestock Products.

A. Meat.

1. Slaughter.

a. Animal is stunned and bled.
b. Hide or pelt is removed on beef and sheep, only hair removed on hogs although they are sometimes skinned.
c. Internal organs, head, feet, and other inedible parts are removed.
d. Carcass is cleaned and cooled.
e. Carcass is generally allowed to age for a short period of time.
f. Beef carcass is cut into quarters for easier handling.

2. Retail cuts.

a. Carcass is cut up into roasts, steaks or chops, ribs, and other cuts.
b. Excess fat is trimmed away.
c. Poorer quality cuts along with meat and fat scraps are ground for hamburger or sausage.
d. Pork hams are generally injected with a salt curing solution and smoked.
e. Many different kinds of smoked sausages and specialty meats.

3. By-products.

a. Hide is tanned for leather products.
b. Tallow and lard are used in making edible and non-edible oils, soap and many other products.
c. Many glands are used in preparing various types of medicine.
d. Hides, bone, or blood can be used in making glue.
e. Various by-products used to make pet food.

B. Milk.

1. Milk is cooled to around 5° C. (40° F.) as soon as possible after milking.

2. Bulk tanks generally used for storage.

3. Best quality milk is processed and sold as fluid milk.

    a. Pasteurized - heated to stop bacterial growth.
    b. Homogenized - put under high pressure to diffuse fat molecules.
    c. May separate cream and skim milk.
    d. Various types of fluid milk sold.

        1) Whole.
        2) Lowfat or two percent.
        3) Skim.
        4) Flavored.

4. Other milk processed in a variety of ways.

    a. Ice cream.
    b. Butter.
    c. Cheeses.
    d. Cottage cheese.
    e. Condensed or evaporated milk.
    f. Livestock feed supplements.

C. Eggs.

1. Washed and cooled.

2. Candled to determine quality.

3. Graded by size, weight, and quality.

D. Wool.

1. Short fibers used for woolen yarns, long fibers used for worsted wool fabric.

2. Woolens.

    a. Cleaned.
    b. Carded.
    c. Spun.
    d. Woven or knitted.

3. Worsted.

    a. Cleaned.
    b. Carded.

   c. Combed.
   d. Spun.
   e. Woven.

4. Worsted wool has a much smoother finish.

Student Learning Activities:

1. Have the students complete the worksheet on definitions dealing with livestock production. The terms are in the order they appear in the Key Facts outline.

2. Have the students tour various types of production operations and sales, marketing and processing businesses in the community.

3. Have students report on an occupation of their choice in the livestock industry. It should include such things as duties, hours, working conditions, salary, advantages and disadvantages of the occupation, and education required.

4. Show any of the following films:

   Vernard Films, Peoria, Illinois

   - Tomorrow's Beef Today

   Modern Talking Picture, Minneapolis, Minnesota

   - From Cow To Carton
   - Idaho Cattle Country
   - Product Of Pride
   - Profitable Pork Production

   North Dakota State Film Library, Fargo, North Dakota

   - Beef - The Steak In The Grass
   - The Cattle Feeders
   - Egg Grades - A Matter Of Quality
   - Pork - The Meal With A Squeal
   - Poultry - Laying It On The Line
   - The Sheep Rancher
   - Something To Crow About
   - Veterinarian, USDA

Worksheet #1

Write a short definition for each of the terms below relating to livestock production.

Cow -

Calf -

Bull -

Wean -

Dehorn -

Castrate -

Consignment Auction -

Terminal Market -

Order Buyer -

Heifer -

Replacement -

Breed -

Crossbreed -

Yearling -

Roughage -

Steer -

Packer -

Purebred -

Registered -

Pedigree -

Production Record -

Dry Period -

Freshen -

Farrow -

Sow -

Confinement -

Gilt -

Boar -

Lamb -

Ewe -

Ration -

Flushing -

Docking -

Shearing -

Ram -

Wether -

Hen -

Broiler -

Poult -

Job 4: Identifying Animal Parts.

Objectives:

The objectives of this job shall be met at a level predetermined by the instructor. The manner in which they are evaluated shall also be determined by the instructor.

Upon completion of this job, the student shall be able:

1. to identify parts of a beef animal.
2. to identify parts of a hog.
3. to identify parts of a sheep.
4. to identify parts of a dairy animal.
5. to identify parts of a horse.
6. to identify parts of poultry.

Guide Questions:

1. What are the important parts in the selection of beef?
2. What are the important parts in the selection of swine?
3. What are the important parts in the selection of sheep?
4. What are the important parts in the selection of dairy?
5. What are the important parts in the selection of horses?
6. What are the important parts in the selection of poultry?

References:

Basic Vocational Agriculture I. Vocational Instructional Services, Texas A & M University, College Station, Texas.

Introduction to Agriculture. California Vocational Agriculture Curriculum Guidelines, Vocational Education Productions, California Polytechnic State University, San Luis Obispo, California, 1977.

Vocational Agriculture I. Oklahoma State Board of Vocational and Technical Education, Stillwater, Oklahoma, 1971.

Interest Approach:

Ask the students if they have ever seen a horse with 4 white cannons. Then explain that the cannon is the lower part of the leg. Point out the importance of knowing animal parts when discussing livestock.

Key Facts:

I. Important Parts in Beef Selection. (Transparency 1)

A. Poll - top of the head.

B. Neck.

C. Shoulder.

D. Top of Shoulder - area above the shoulder.

E. Back.

F. Loin.

G. Ribs.

H. Rump.

I. Tail Head - where tail attaches to the body.

J. Pin Bones - rear point of the hip bone.

K. Hooks - front point of the hip bone.

L. Round or Quarter - rear leg muscle or thigh.

M. Stifle - muscle on lower quarter.

N. Twist - area inside and between rear legs.

O. Hocks - joint between upper and lower leg.

P. Dew Claw - cartilage above the hoof.

Q. Pastern - upper part of foot between the dew claw and hoof.

R. Hind Flank - area between belly and leg.

S. Cod - steer's sac where testes were removed in castration.

T. Underline - between front and back legs.

U. Chest or Hearth Girth - measured from top of shoulder to chest floor.

V. Shank - bone in lower leg (front or back).

W. Knee.

X. Fore Flank - area behind front leg.

Y. Brisket.

Z. Dewlap - loose skin.

AA. Muzzle - nose and mouth area.

BB. Forehead.

II. Important Parts in Swine Selection. (Transparency 2)

A. Poll - top of head.

B. Neck.

C. Shoulder.

D. Back.

E. Loin.

F. Rump.

G. Tail.

H. Ham - rear leg muscle or thigh.

I. Stifle.

J. Hock.

K. Hind Flank.

L. Belly.

M. Side - midsection from shoulder to ham.

N. Underline.

O. Fore Flank.

P. Dew Claws.

Q. Toes.

R. Pastern.

S. Jowl - throat area.

T. Cheek.

U. Snout.

III. Important Parts in Sheep Selection. (Transparency 3)

A. Poll.

B. Neck.

C. Top of shoulder.

D. Back or Rack.

E. Loin.

F. Rump.

G. Hip.

H. Dock - tail.

I. Leg of Lamb - rear leg muscle or thigh.

J. Twist.

K. Hock.

L. Pastern.

M. Hind Flank.

N. Ribs.

O. Fore Flank.

P. Shank.

Q. Knee.

R. Brisket.

S. Breast.

T. Shoulder.

U. Muzzle.

V. Face.

IV. Important Parts in Dairy Selection. (Transparency 4)

A. Poll.

B. Neck.

C. Heart Girth.

D. Withers - top of shoulder.

E. Crops.

F. Chine - front part of back.

G. Ribs.

H. Back - includes both chine and loin area.

I. Barrell - circumference of midsection.

J. Loin.

K. Hip or Hook.

L. Rump.

M. Tailhead.

N. Pin bone.

O. Thigh.

P. Rear Udder Attachment - point where udder attaches in rear.

Q. Stifle.

R. Flank.

S. Hock.

T. Dew Claw.

U. Teats.

V. Udder - mammary glands.

W. Fore Udder Attachment - point where udder attaches in front.

X. Mammary Veins - large blood vessels along underline.

Y. Pastern.

- Z. Knee
- AA. Chest Floor - base of chest.
- BB. Brisket.
- CC. Dewlap.
- DD. Shoulder.
- EE. Muzzle.
- FF. Forehead.

V. Important Parts in Horse Selection. (Transparency 5)

- A. Poll.
- B. Crest.
- C. Withers.
- D. Back.
- E. Loin.
- F. Rump.
- G. Point of Hip.
- H. Tail Head.
- I. Buttock.
- J. Thigh.
- K. Hock.
- L. Pastern.
- M. Fetlock - projection above the hoof.
- N. Ankle.
- O. Cannon - bone in lower leg.
- P. Gaskin - muscle in middle part of leg.
- Q. Stifle.
- R. Flank.

S. Heart Girth.

T. Hoof.

U. Knee.

V. Forearm.

W. Chest.

X. Shoulder.

Y. Neck.

Z. Throat Latch - skin in throat area.

AA. Muzzle.

BB. Face.

CC. Forehead.

VI. Important Parts in Poultry Selection.

A. Chicken. (Transparency 6)

1. Comb.
2. Ear.
3. Ear Lobe.
4. Cape - shoulder area.
5. Back.
6. Tail.
7. Hock.
8. Shank.
9. Webb - between toes.
10. Toes.
11. Thigh.
12. Keel - breast bone.
13. Wing.
14. Breast.

15. Neck.

16. Wattle - loose skin under beak.

B. Turkey. (Transparency 7)

1. Ear.
2. Neck.
3. Back.
4. Tail.
5. Toes.
6. Shank.
7. Leg.
8. Keel.
9. Breast.
10. Wing.
11. Throat.
12. Wattle.

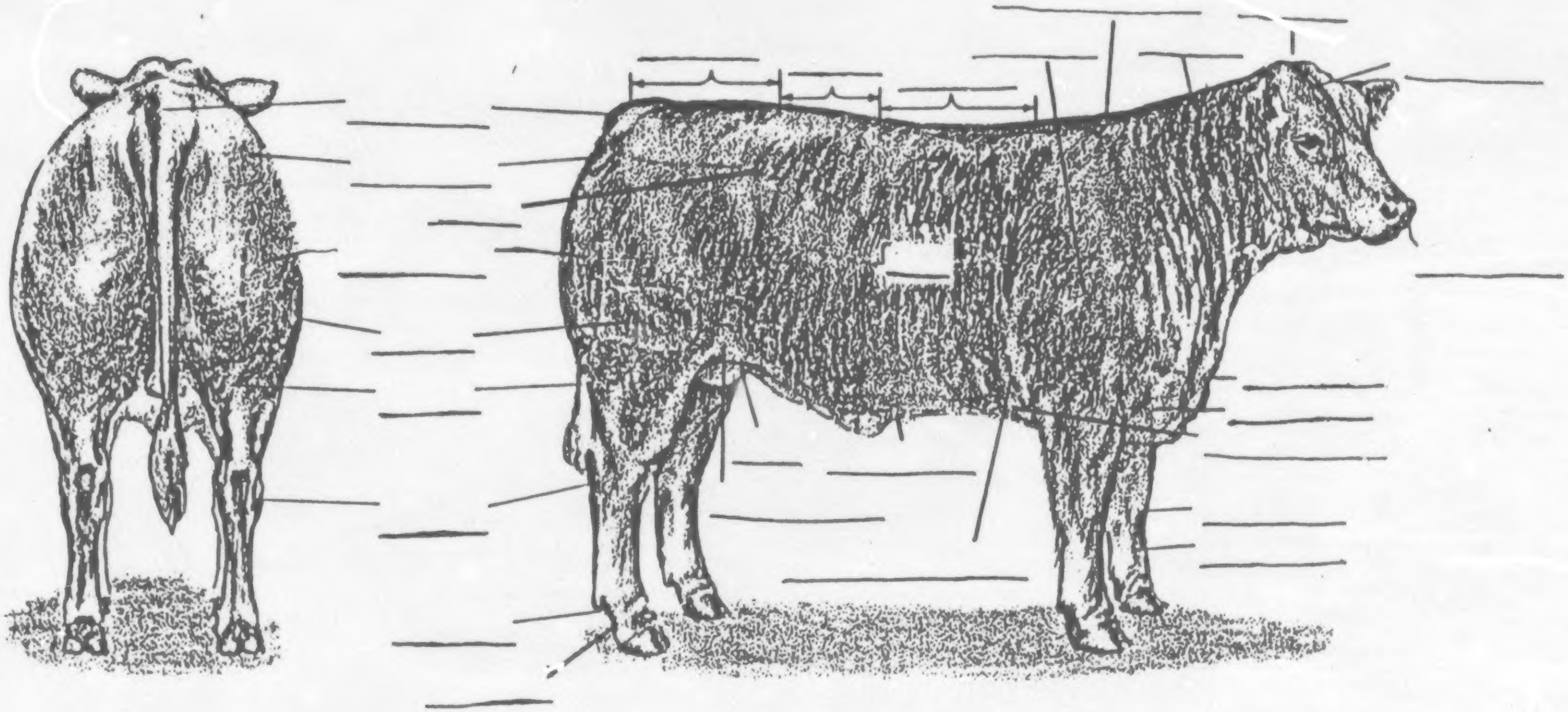
Student Learning Activities:

1. Have the students complete the enclosed worksheets. Emphasize the parts which are different between species such as beef - round, hog - ham, and sheep - leg of lamb. You may wish to fill several of the blanks on each worksheet.

2. Have the students look at live animals and identify parts.

PARTS OF A BEEF ANIMAL

FILL IN THE MISSING PARTS

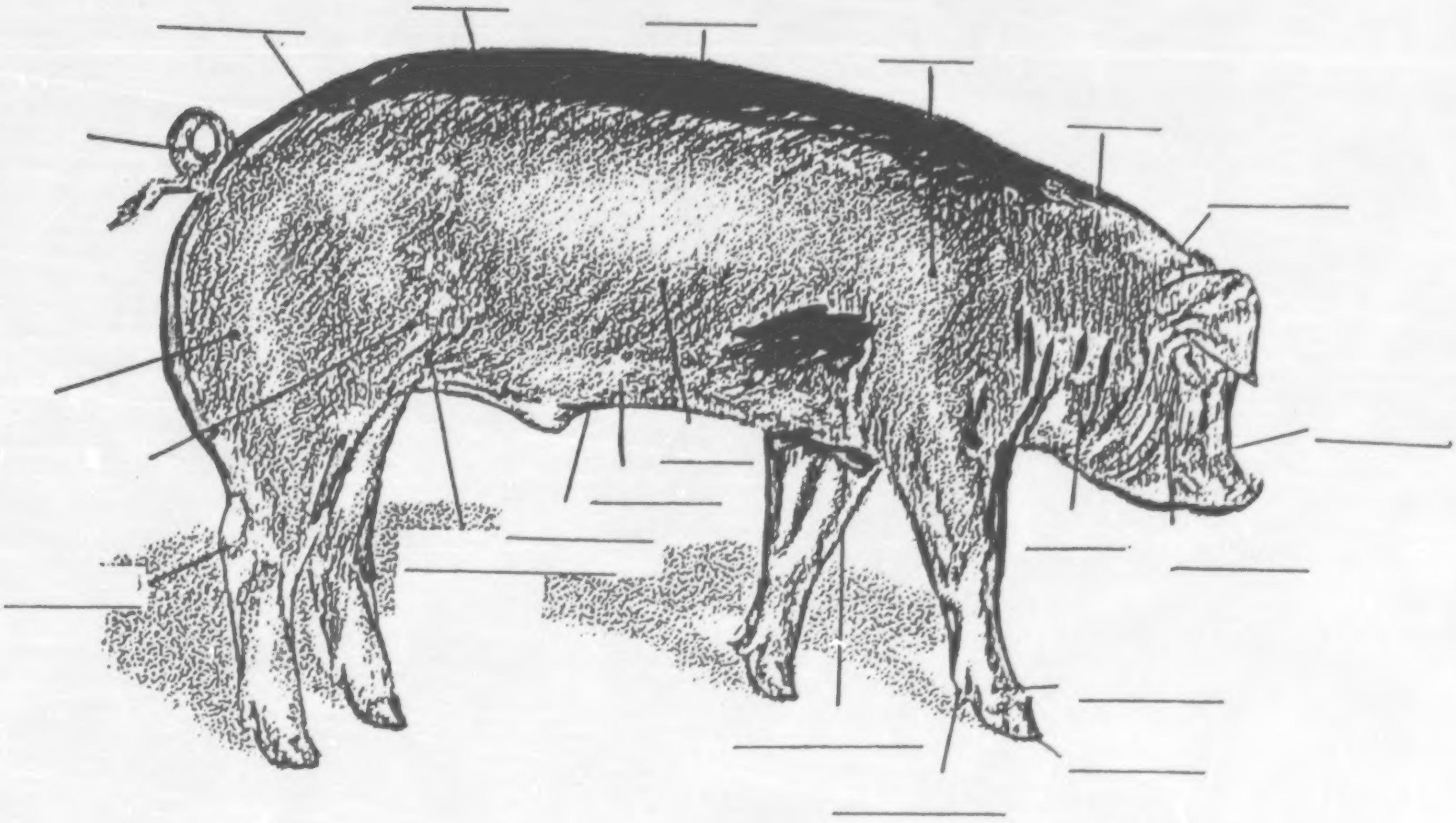


Worksheet #1

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

PARTS OF A HOG

FILL IN THE MISSING PARTS

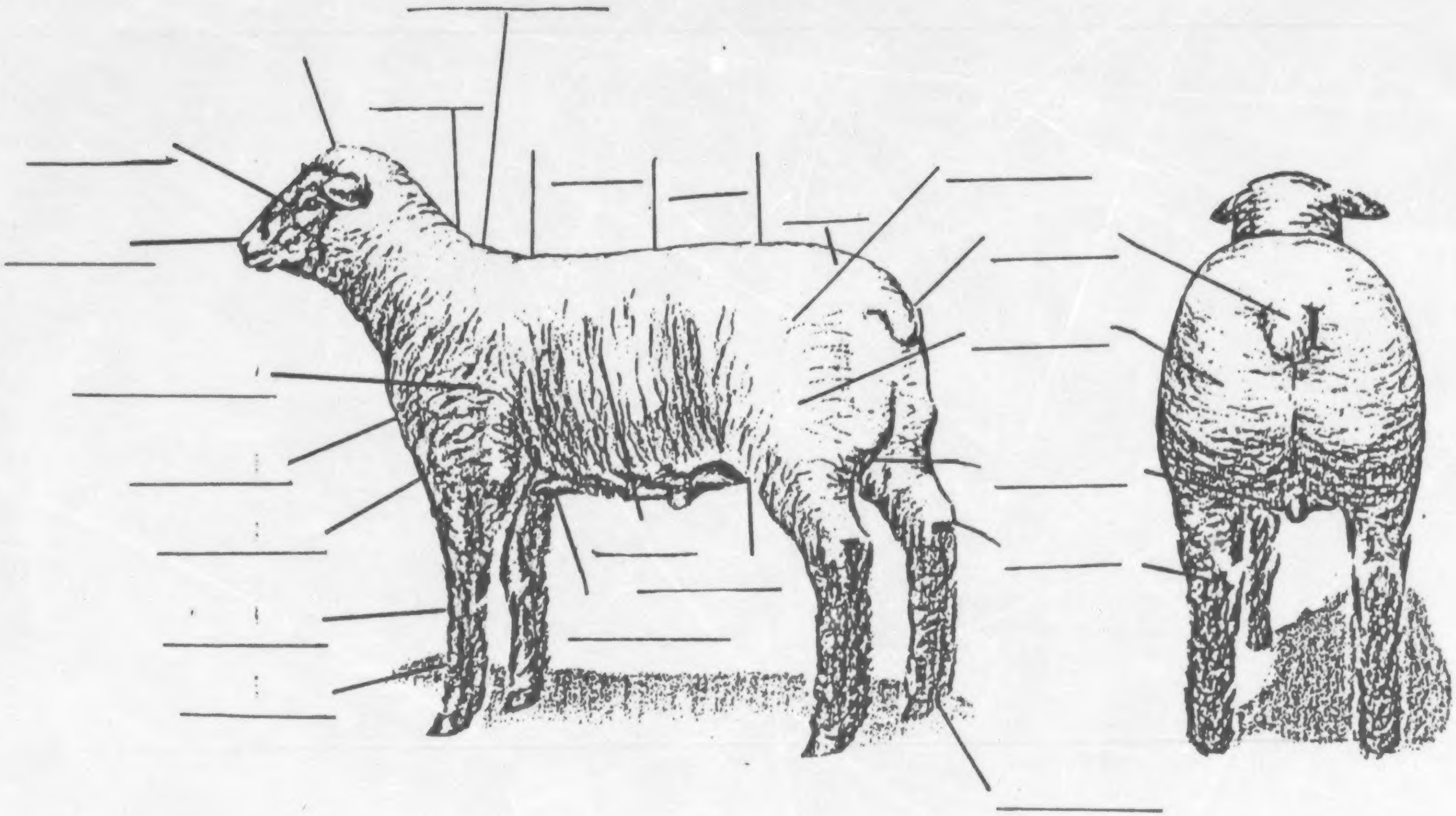


Courtesy of Vocational Instructional Services, Texas A & M University,
College Station, Texas

Worksheet #2

PARTS OF A SHEEP

FILL IN THE MISSING PARTS



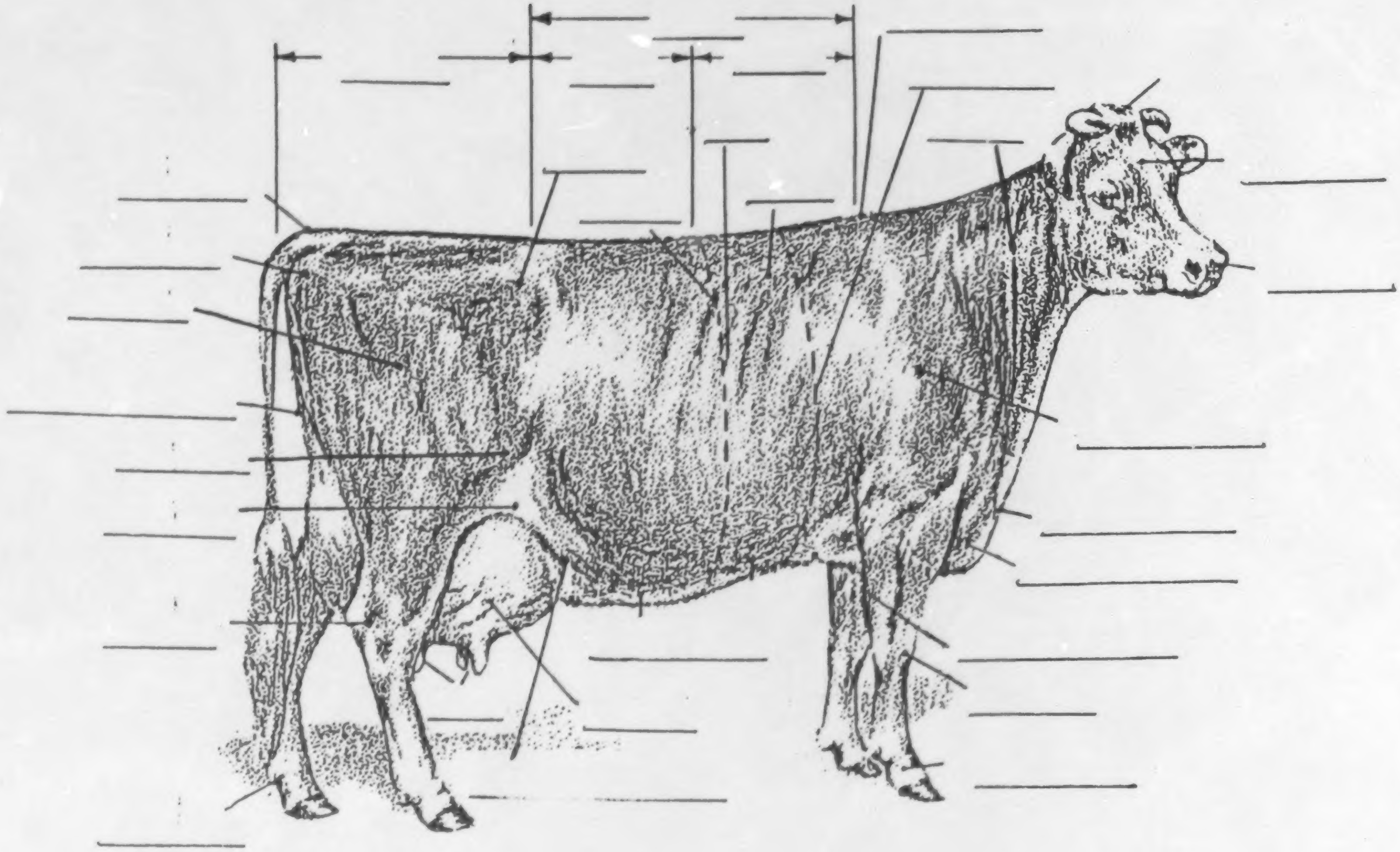
Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

Worksheet #3

PARTS O[illegible] A DAIRY COW

FILL IN THE MISSING PARTS

Worksheet #4

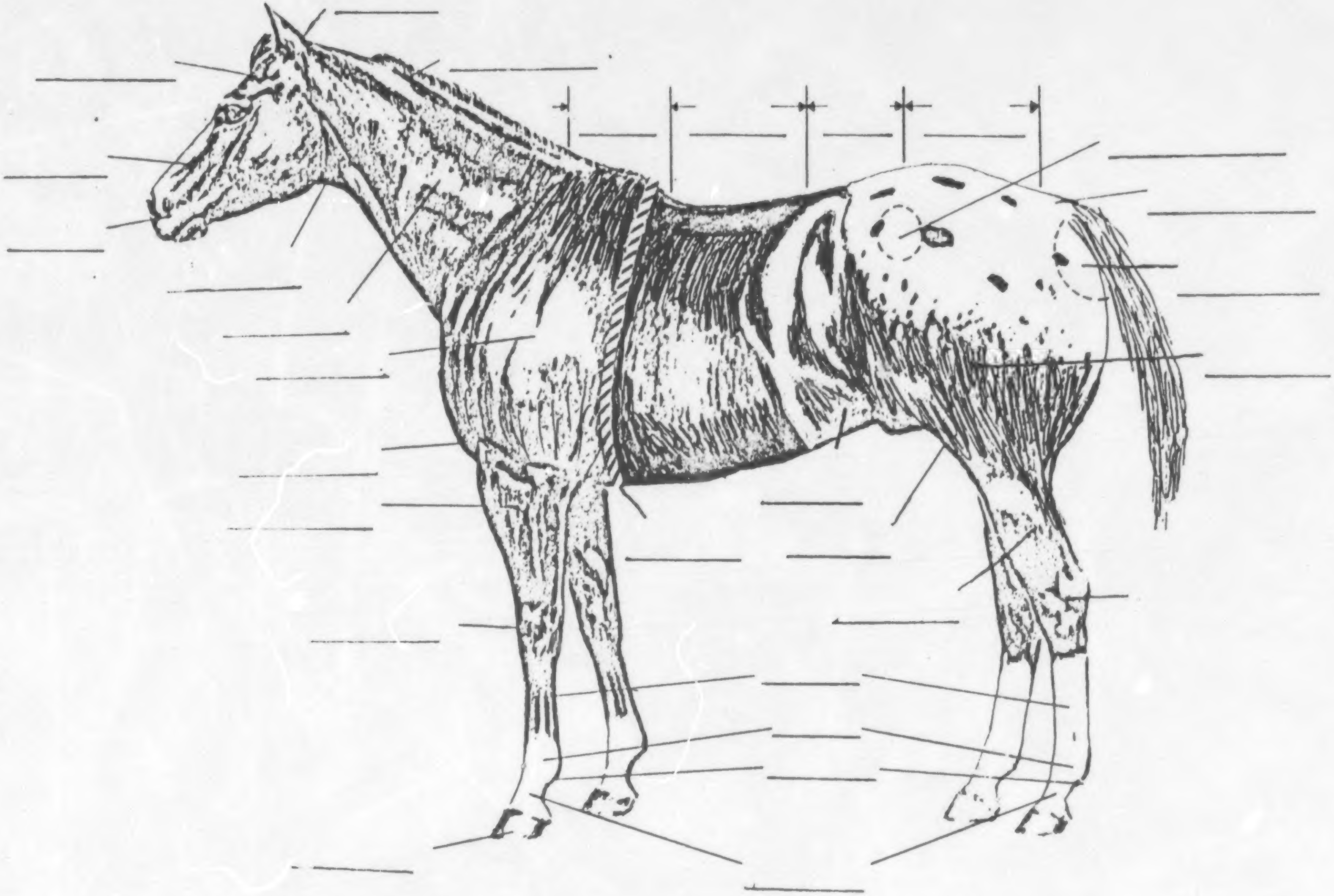


Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

Worksheet #5

PARTS OF THE HORSE

FILL IN THE MISSING PARTS



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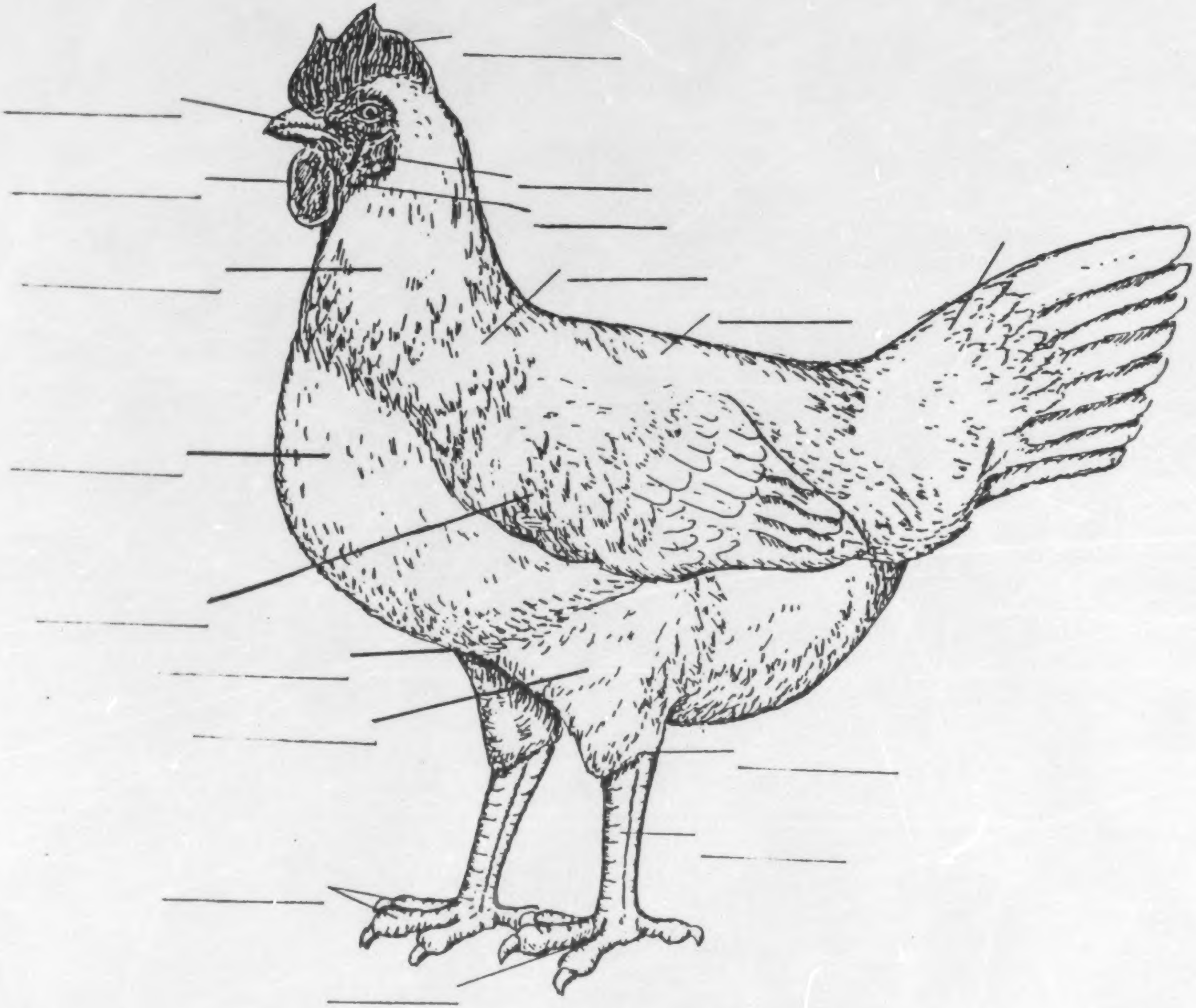
PARTS OF A CHICKEN

FILL IN THE MISSING PARTS

Worksheet #6



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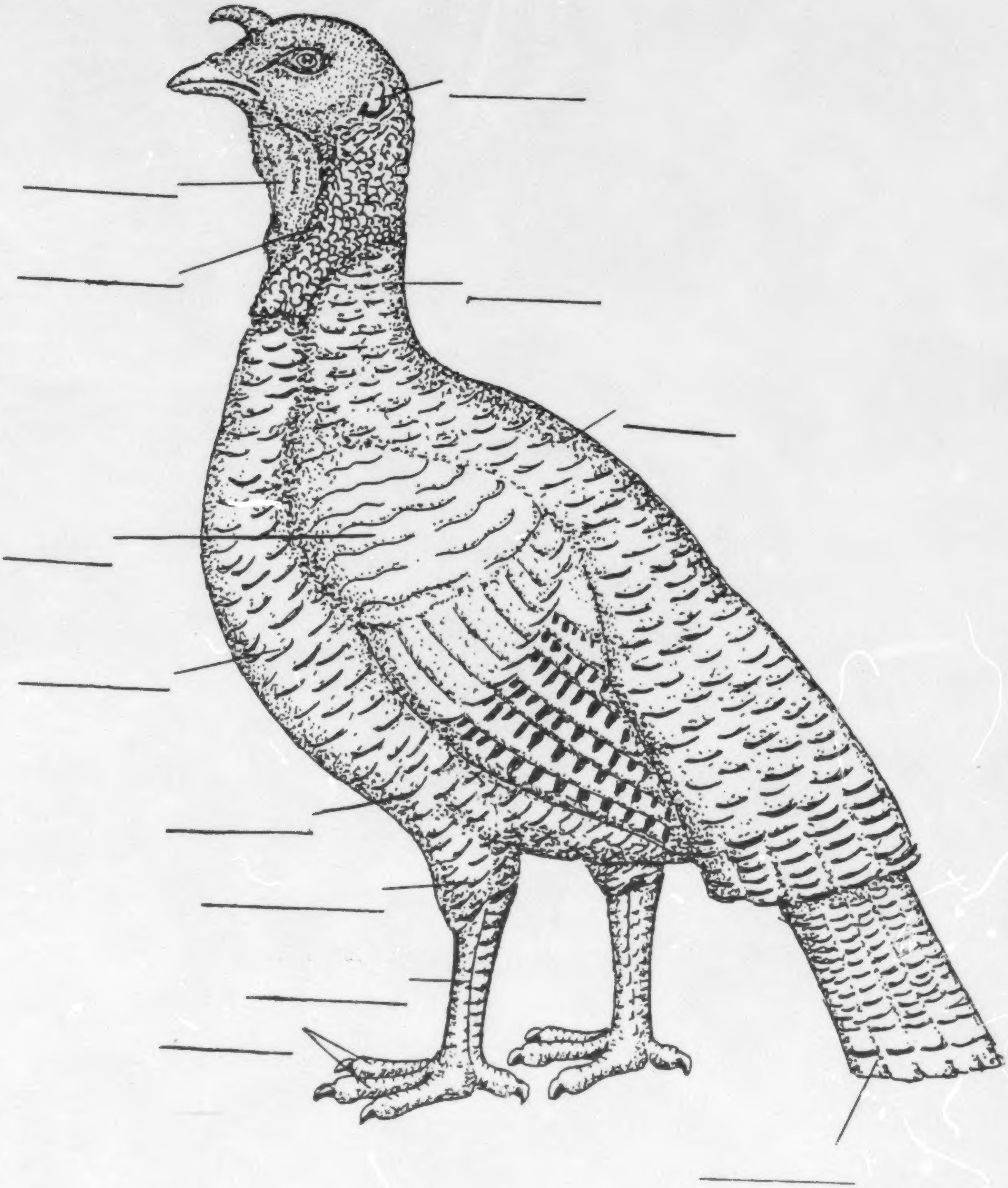
Worksheet #7

PARTS OF A TURKEY

FILL IN THE MISSING PARTS



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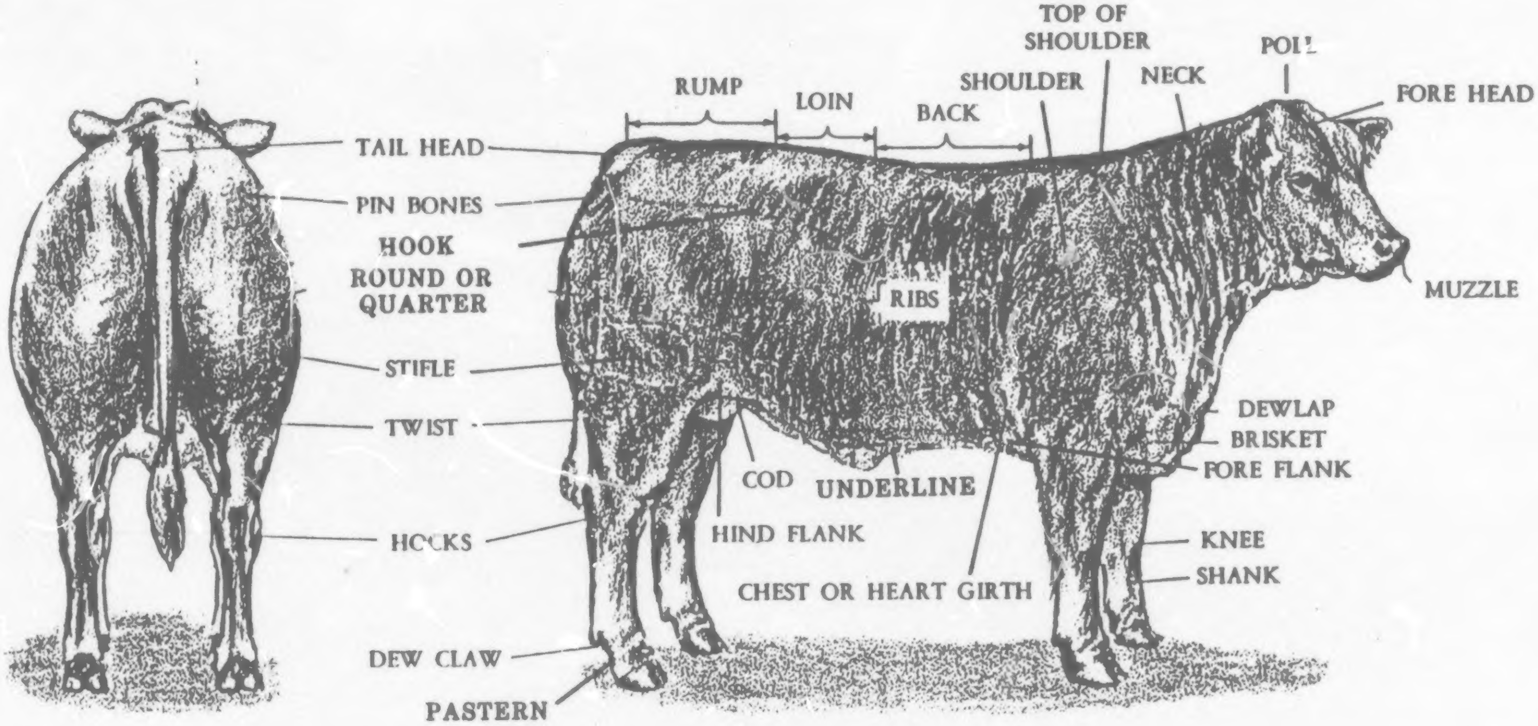
PARTS OF A BEEF ANIMAL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POLL
SHOULDER
NECK
FORE HEAD
RUMP
LOIN
BACK
TAIL HEAD
PIN BONES
HOOK
ROUND OR QUARTER
RIBS
MUZZLE
STIFLE
TWIST
DEWLAP
BRISKET
FORE FLANK
COD
UNDERLINE
HIND FLANK
HOCKS
KNEE
SHANK
CHEST OR HEART GIRTH
DEW CLAW
PASTERN

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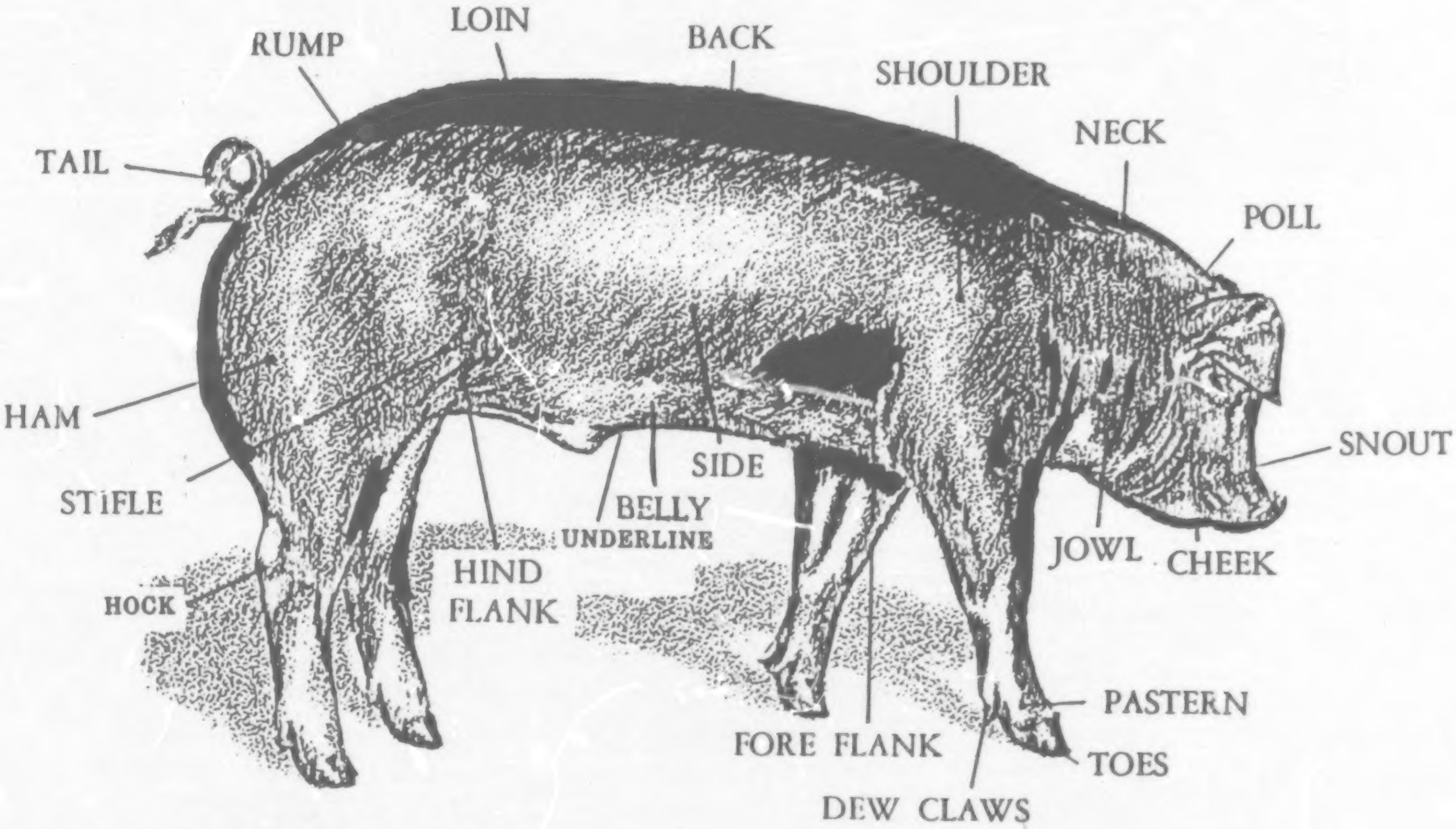
81

82

PARTS OF A HOG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RUMP
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HAM
SNOUT
SIDE
STIFLE
BELLY
UNDERLINE
JOWL
CHEEK
HIND
FLANK
HOCK
PASTERN
FORE FLANK
TOES
DEW CLAWS

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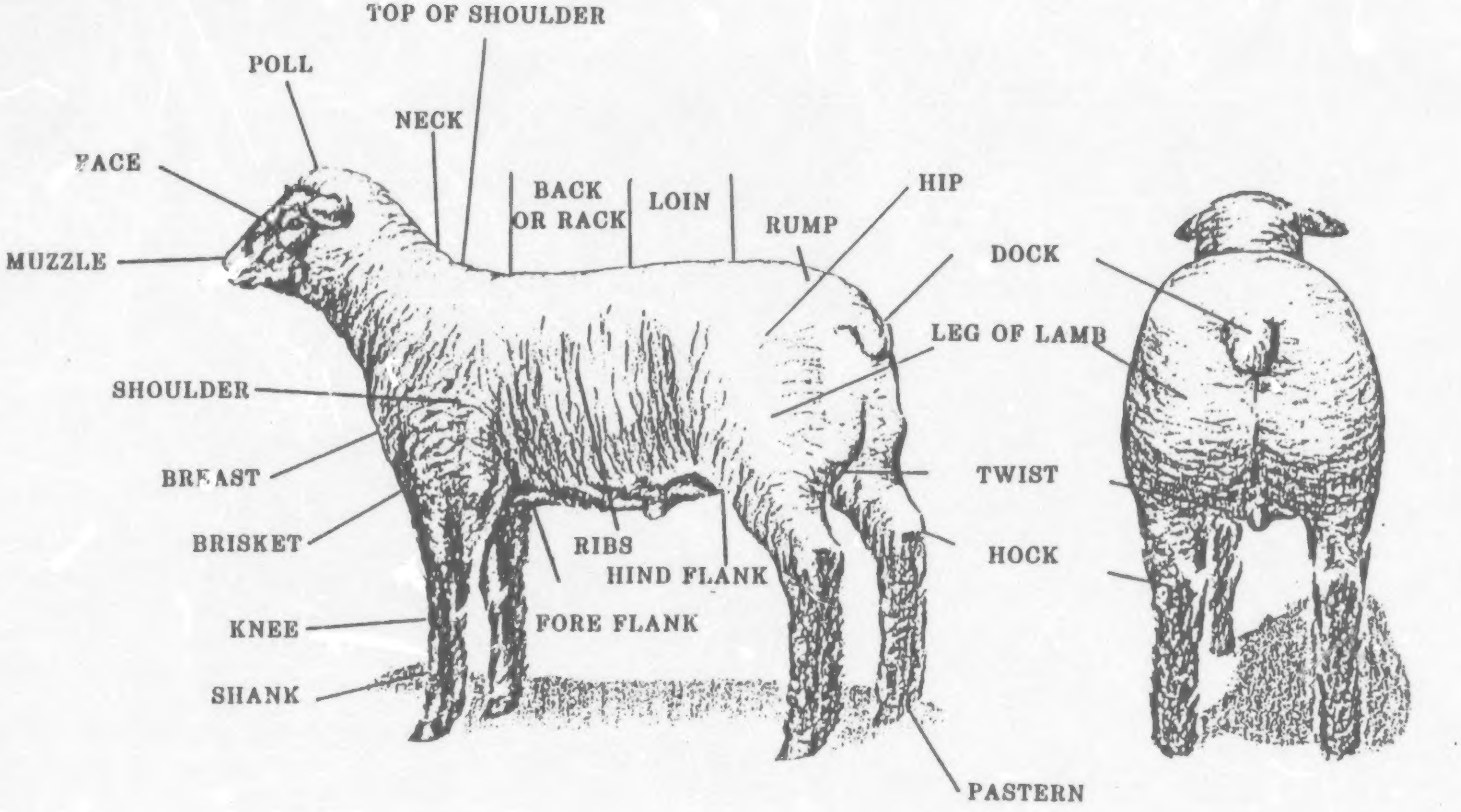
College Station, Texas

PARTS OF A SHEEP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TWIST
BREAST
BRISKET
RIBS
HOCK
HIND FLANK
KNEE
FORE FLANK
SHANK
PASTERN

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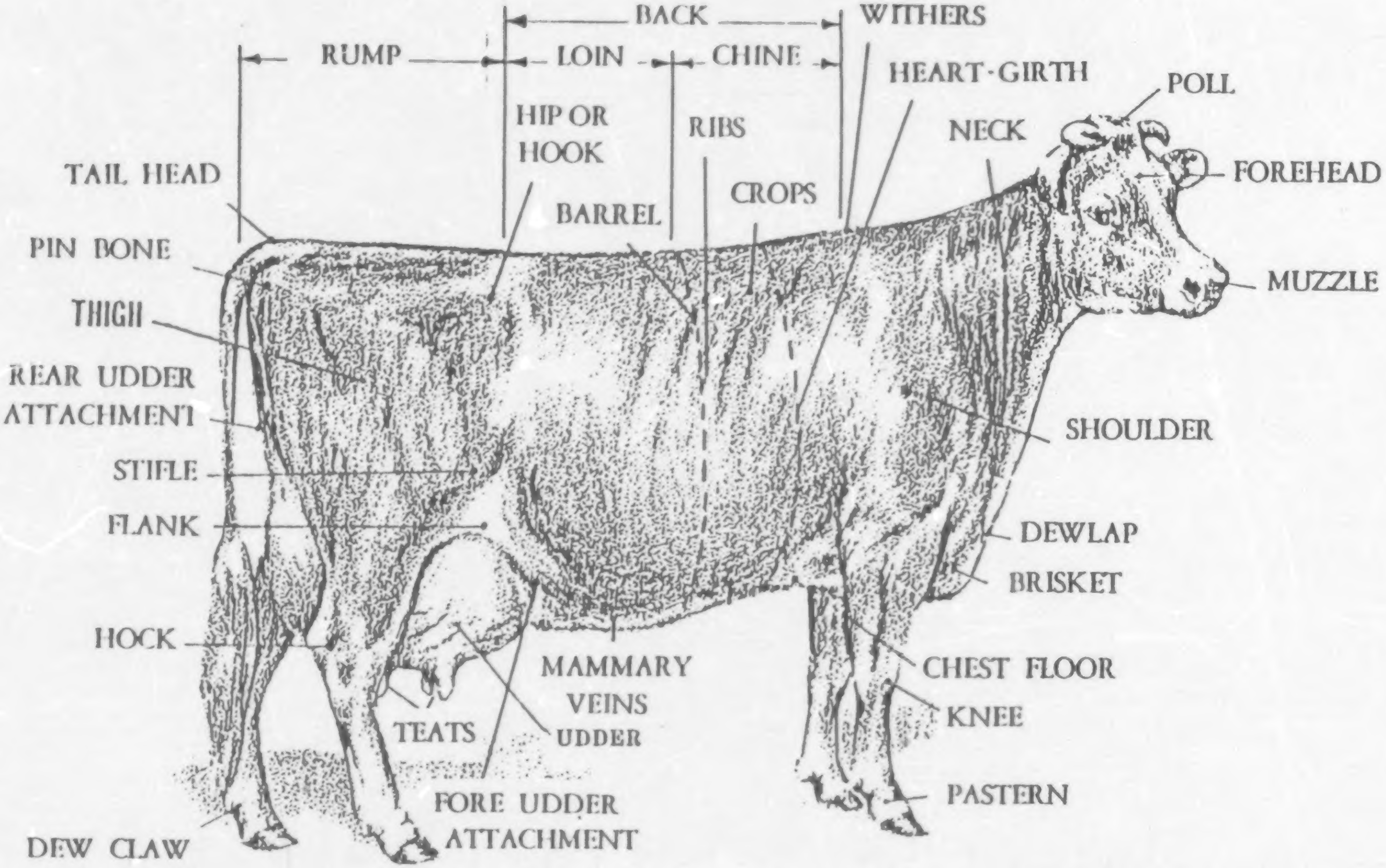
PARTS OF A DAIRY COW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RUMP
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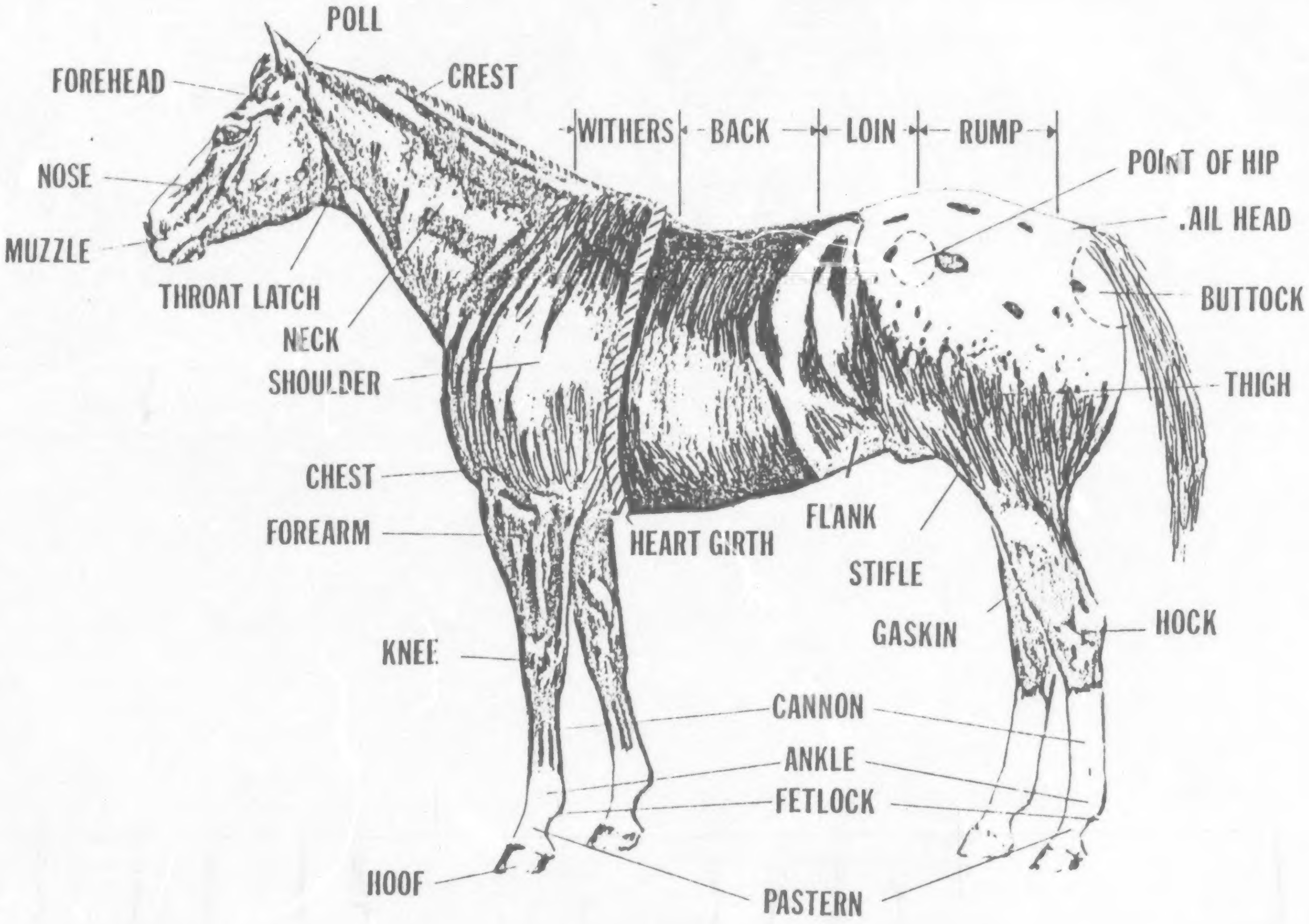
CHINE
WITHERS
HEART-GIRTH
POLL
HIP OR HOOK
RIBS
NECK
FOREHEAD
TAIL HEAD
CROPS
BARREL
PIN BONE
MUZZLE
THIGH
REAR UDDER ATTACHMENT
SHOULDER
STIFLE
FLANK
DEWLAP
BRISKET
HOCK
MAMMARY VEINS
CHEST FLOOR
TEATS
UDDER
KNEE
PASTERN
FORE UDDER ATTACHMENT
DEW CLAW

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

PARTS OF THE HORSE


POLL
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THIGH
CHEST
FOREARM
HEART GIRTH
FLANK
STIFLE
GASKIN
HOCK
KNEE
CANNON
ANKLE
FETLOCK
HOOF
PASTERN

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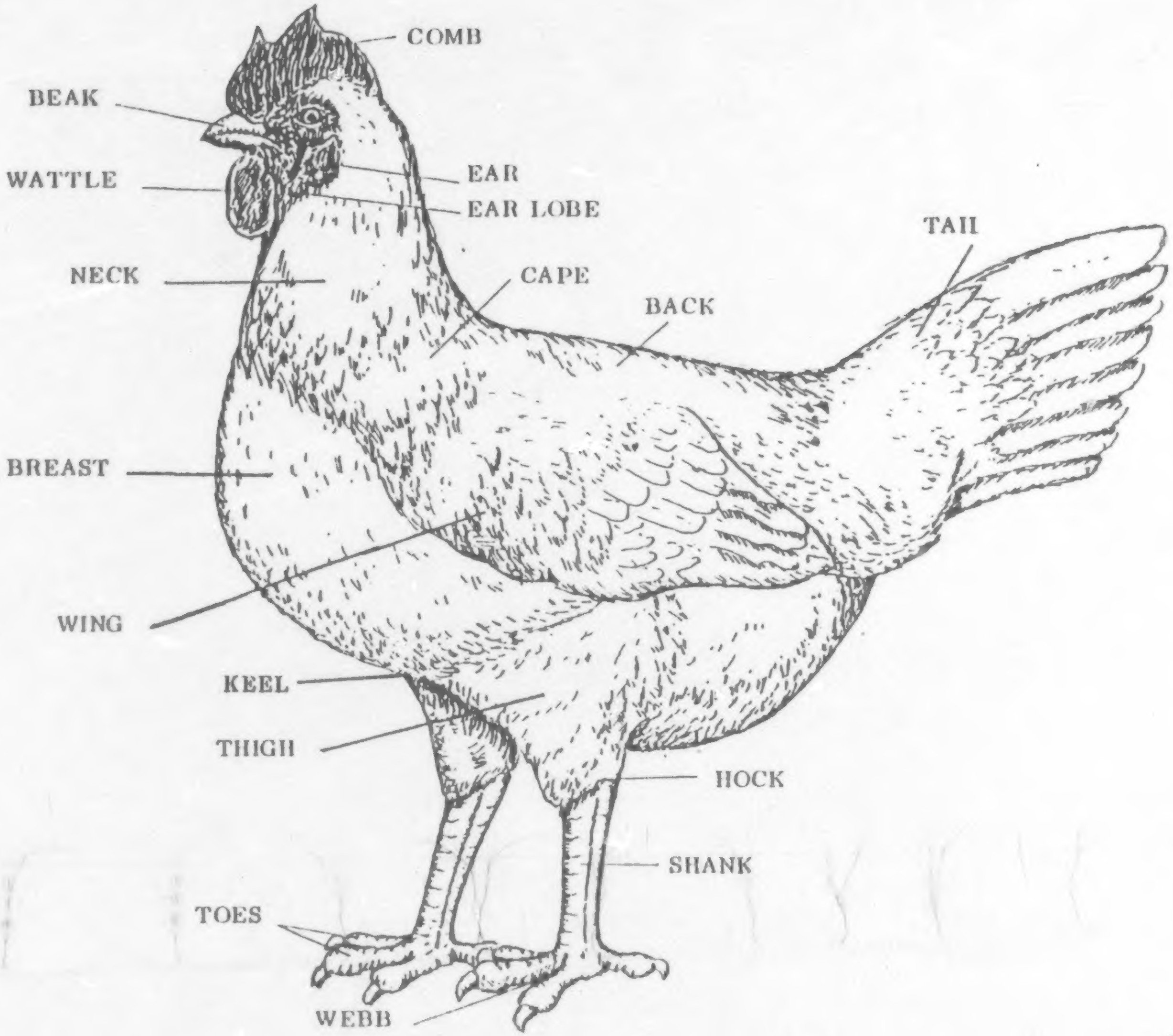
College Station, Texas

PARTS OF A CHICKEN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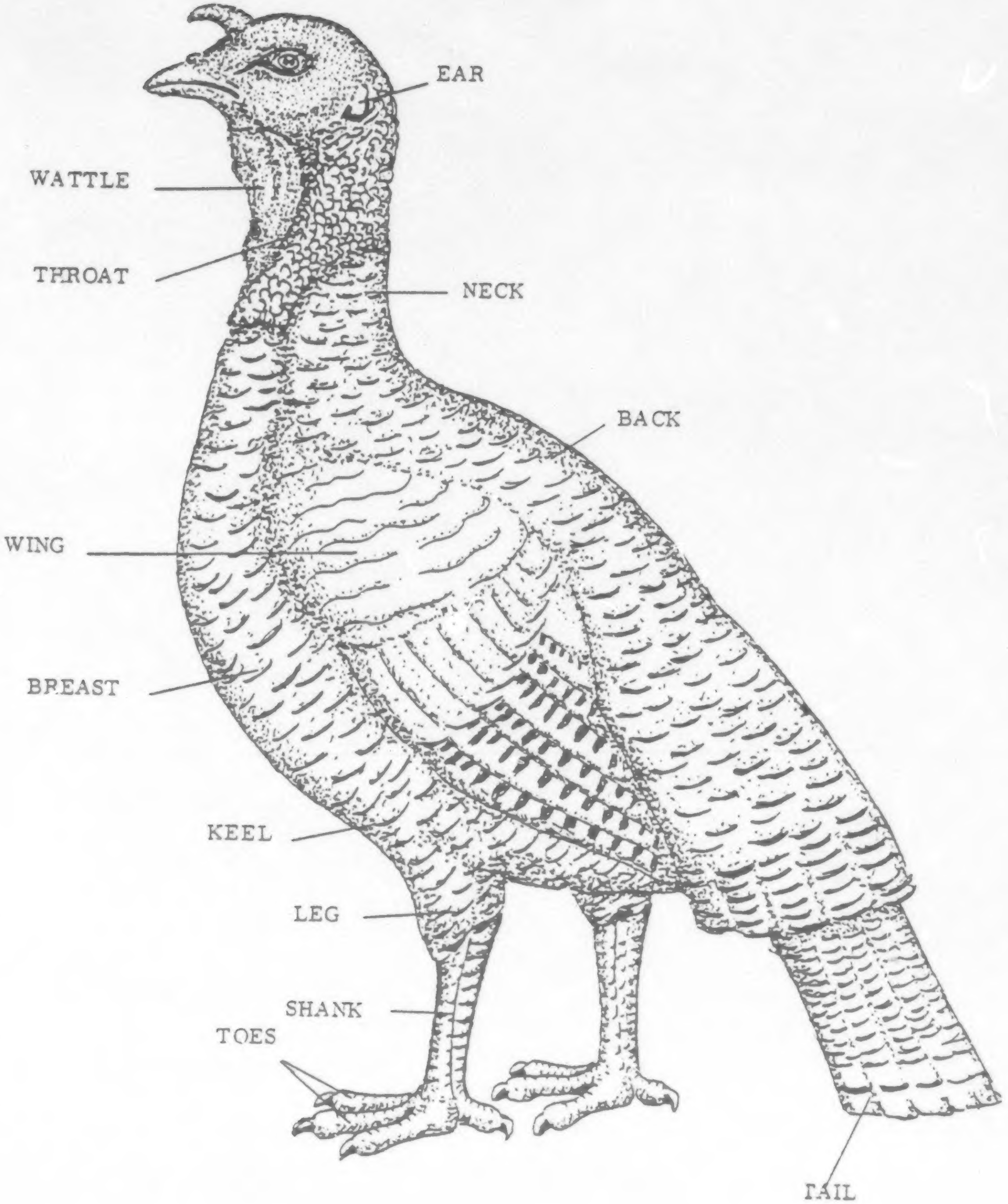
KEEL
THIGH
HOCK
SHANK
TOES
WEBB

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

PARTS OF A TURKEY


EAR
WATTLE
THROAT
NECK
BACK
WING
BREAST
KEEL
LEG
SHANK
TOES
TAIL

Courtesy of Vocational Instructional Services, Texas A & M University,
College Station, Texas

Job 5: Selecting Livestock and Giving Reasons.

Objectives:

The objectives of this job shall be met at a level predetermined by the instructor. The manner in which they are evaluated shall also be determined by the instructor.

Upon completion of this job, the student shall be able:

1. to list important factors in selecting beef.
2. to list important factors in selecting hogs.
3. to list important factors in selecting sheep.
4. to list important factors in selecting dairy.
5. to list important factors in selecting horses.
6. to list important factors in selecting poultry.
7. to judge classes of livestock.
8. to give reasons on a class of livestock.

Guide Questions:

1. What factors are important in selecting beef?
2. What factors are important in selecting hogs?
3. What factors are important in selecting sheep?
4. What factors are important in selecting dairy?
5. What factors are important in selecting horses?
6. What factors are important in selecting poultry?
7. How do you go about judging a class of livestock?
8. How is a set of reasons given?

References:

Basic Vocational Agriculture I. Vocational Instructional Services, Texas A & M University, College Station, Texas.

Edgerly, Charles G. M. Dairy Cattle Judging Guide. Cooperative Extension Service, North Dakota State University, Fargo, North Dakota.

Hunsley, Roger E., W. Malcolm Beeson, and Julius E. Nordby. Livestock Judging, Selection and Evaluation. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1978.

Livestock Judging Guide. Cooperative Extension Service, North Dakota State University, Fargo, North Dakota.

Interest Approach:

Tell the students that you have two elephants for sale, both the same price. Ask them how they would choose between the two if they were going to buy one. After several suggestions point out that it would depend on what they were going to use it for. Make up some outrageous examples such as selecting the one with the largest trunk for changing light bulbs in high places. Then point out the importance of livestock selection.

Key Facts:

I. Important Factors in Selecting Beef.

  A. Factors. (Transparency 1)

    1. Length.

      a. Body - shoulder to end of rear quarter.
      b. Rump - hooks to pin bones.
      c. Loin - last rib to hooks.

    2. Thickness and muscling. (Transparency 2)

      a. Width of round - widest at center of stifle.
      b. Depth of round - from hooks to bottom of the round.
      c. Width of loin and back - view from top.
      d. Muscling in arm and shoulder - should be long and smooth.
      e. Width of legs - should be wide and straight.

        1) Back legs between hocks.
        2) Front legs between knees.

    3. Body capacity.

      a. Spring of rib - should be deep and square.
      b. Depth of chest or heart girth.
      c. Width of front legs.

    4. Absence of excess fat.

      a. Underline and flank - should be clean and trim.
      b. Brisket and dewlap - should be clean and trim.

   - c. Twist - should be bulging and rounded, not square.
   - d. Shoulder, ribs, and back - feel for thin cushion over firm muscle.

5. Feet and legs.

   - a. Heavy boned - circumference of shank bone is a good indication.
   - b. Pastern - should stand up straight on pasterns.
   - c. Front legs - should be straight from shoulder to knee to foot. (Transparency 3)
   - d. Back legs - should be straight from center of round to hock to foot. (Transparencies 4 and 5)
   - e. Should stand with a leg under each corner.
   - f. Walk should be smooth.

6. Breeding animal characteristics.

   - a. Bulls - should have a masculine appearance about the head.
   - b. Heifers - should have a feminine appearance about the head.
   - c. Purebreds - should show breed character.

7. Primary consideration should be given to the higher priced cuts. (Transparency 6)

   - a. Ribs.
   - b. Loin.
   - c. Rump.
   - d. Round.

B. Procedure for evaluating an animal.

1. View from side first.

   - a. Stand about 6 meters (20 ft.) away.
   - b. View the animal walking and standing.
   - c. Examine for the following:

     1) Length of body and rump.
     2) Depth of round.
     3) Levelness over the top.
     4) Depth of body.
     5) Trimness of underline and brisket.
     6) Straightness of legs.
     7) Ease of movement.

2. View from the rear second.

   - a. Remain about 6 meters (20 ft.) away.
   - b View the animal walking and standing.
   - c. Examine for the following:

            1) Thickness of the round.
            2) Depth of the round.
            3) Width across the loin and back.
            4) Trimness of center of twist.
            5) Width between legs when standing.
            6) Straightness of legs.
            7) Ease of movement.

3. View from the front third.

    a. Remain about 6 meters (20 ft.) away.
    b. View the animal walking and standing.
    c. Examine for the following:

        1) Thickness and muscling of shoulder.
        2) Width between legs.
        3) Breed and sex characteristics.
        4) Straightness of legs.
        5) Trimness of brisket.
        6) Ease of movement.

4. Handle the animal last (if possible).

    a. Check fat cover.

        1) Over the shoulder and ribs.
        2) Over the back, loin, and rump.

    b. Check for length of loin.

        1) Locate last rib.
        2) Measure to hooks.

II. Important Factors in Selecting Hogs.

A. Factors. (Transparency 7)

1. Length.

    a. Body - shoulder to center of ham.
    b. Ham - hip to top of ham.

2. Thickness and muscling. (Transparency 8)

    a. Width of ham - widest at center and widest part of the body.
    b. Depth of ham - hip to base of ham.
    c. Bulge of ham - from tail to base of ham.
    d. Width of loin and back - wide with rounded turn over the top.
    e. Width between legs.
    f. Firmness of ham - does not jiggle when walking.
    g. Muscling of arm and shoulder - should be long and smooth.

3. Body capacity.
    a. Spring of rib.
    b. Depth of chest.
    c. Width of front legs.
4. Absence of excess fat
    a. Underline and flank - should be trim and clean.
    b. Jowl - should be trim and clean.
    c. Ham - should be firm and rounded.
    d. Back and loin - should have proper turn over the top, squareness indicates fat.
    e. Shoulder and back - should be thin cushion of fat over firm muscle.
5. Feet and legs.
    a. Heavy boned - circumference of shank bone.
    b. Pastern - should stand up straight on pastern.
    c. Front leg - should be straight from shoulder to knee to foot.
    d. Back leg - should be straight from center of ham to hock to foot.
    e. Walk should be smooth and easy, not choppy.
6. Breeding animals.
    a. Boars should have a rugged masculine appearance.
    b. Boars and gilts should both have at least 6 evenly spaced, distinct nipples on each side.
    c. Purebreds should show breed character.
7. Primary consideration should be given for the higher price cuts. (Transparency 9)
    a. Loin.
    b. Ham.
    c. Bacon.

B. Procedure for evaluating an animal.

1. Basically same as beef.
2. Easier to get accurate idea of length, muscling and fat when hog is walking.
3. Remember to count nipples on breeding stock from side view.
4. Back should be level.

(Note: Review section on beef, using proper terminology for hogs and noting other differences.)

III. Important Factors in Selecting Sheep.

A. Factors. (Transparency 10)

1. Length.

   a. Body - shoulder to end of rump.
   b. Loin - last rib to hip.
   c. Rump - hip to dock.

2. Thickness and muscling. (Transparency 11)

   a. Width of leg - widest at center.
   b. Depth of leg - hip to bottom of leg.
   c. Width of loin and back - usually must handle the animal.
   d. Muscling in arm and shoulder - should be smooth but full and prominant.
   e. Width of legs - between knees or hocks.

3. Body capacity.

   a. Spring of rib - should be well sprung.
   b. Depth of chest - top of shoulder to chest floor.
   c. Width of front legs.

4. Absence of excess fat.

   a. Underline and flank - trim and clean.
   b. Brisket - trim and clean.
   c. Ribs, back, and loin - feel for a thin cushion over firm muscle.

5. Feet and legs.

   a. Heavy boned - circumference of shank.
   b. Pastern - should stand up straight on pastern.
   c. Front legs - should be straight from shoulder to knee to foot.
   d. Back legs - should be straight from center of leg to hock to foot.
   e. Should stand with a leg under each corner.
   f. Walk should be smooth and easy.

6. Breeding animal characteristics.

   a. Rams should look rugged and masculine.
   b. Ewes should look refined and feminine.
   c. Purebreds should show good breed character.
   d. Mouth should be even, teeth meeting evenly, overshot and undershot are undesirable. (Transparency 12)

e. Fleece.

1) Dense.
2) Uniform.
3) Clean.
4) Free from black fibers.

7. Primary consideration should be given to the higher priced cuts. (Transparency 13)

a. Leg.
b. Loin.
c. Rack.

B. Procedure for evaluating an animal.

1. First three steps basically same as beef.

2. Amount of wool may make visual appraisal difficult.

3. Handling step is very important in sheep.

a. Keep fingers extended and close together.
b. Check for amount of fat over top at the rump, loin, and back. Spine is difficult to feel on very fat lambs.
c. Press on the back to determine strength in the top.
d. Check fat cover over the shoulder and ribs.
e. Check width of shoulders using both hands.
f. Check spring of rib in the same way.
g. Continue back to loin and check width and depth.
h. Grasp leg at stifle to determine meatiness of the leg. (Transparency 14)
i. Check the fleece on the shoulder and side using both hands in a flat position to part the wool keeping the fingers together. Let the wool part naturally, do not force apart. Never open the fleece on top or stick your fingers into the wool.
j. Run your finger over the teeth to check for overshot or undershot jaw.

IV. Important Factors in Selecting Dairy.

A. Factors.

1. General appearance.

a. Smooth blending of all parts.
b. Alertness.
c. Back and top line should be strong and straight.
d. Loin should be broad and level.
e. Rump should be long and level.

f. Pin bones should be set wide and high.
g. Tail head should be slightly above pin bones and blend in smoothly.
h. Should exhibit breed character.

2. Dairy character. (Transparency 15)

   a. Head should be clean with large eyes, a broad, well-dished face, and a wide forehead.
   b. Long lean neck blending smoothly into shoulders and brisket.
   c. Clean throat and dewlap.
   d. Withers should be prominant and wedge shaped.
   e. Ribs should be wide apart.
   f. Body should show angularity or wedge shape. (Transparency 16)

      1) Rear view.
      2) Side view.
      3) Front view.

   g. Bone should be flat and of ample quantity, not course boned.
   h. Feet and legs should be straight and strong and placed under each corner.

3. Body capacity.

   a. Broad muzzle with open nostrils.
   b. Heart girth should be deep and broad.
   c. Barrel should be long, deep and wide. (Transparency 17)
   d. Overall size is important.

4. Mammary system. (Transparency 18)

   a. Udder should be large but carried high, not extending below the hocks.
   b. Udders should be balanced front to back and side to side.
   c. Front attachment should be strong and even with underline.
   d. Rear attachment should be high, firm, and wide.
   e. Floor of udder should be level.
   f. Udder should be soft and pliable.
   g. Teats should be wide apart, squarely placed and of of proper size.
   h. Veination should be prominent on the udder.
   i. Mammary veins should be large and prominent.

B. Procedure for evaluating an animal.

1. Similar to other livestock in steps.

   a. Side, rear, and front view in order and about 6 meters (20 ft.) away.

b. Handle the animal last (if possible).

2. Side view.

a. Overall size and length of body.
b. Straightness in top and bottom lines and wedge shape.
c. Smoothness of neck and shoulders.
d. Depth of heart girth.
e. Length and depth of barrel.
f. Length and levelness of rump.
g. Mammary veins and udder veination.
h. Front to rear balance of udder and teat spacing.
i. Front attachment and levelness of udder floor.
j. Straightness of feet and legs.

3. Rear view. (Transparency 19)

a. Angularity of body.
b. Width of loin.
c. Width of hips.
d. Width of pin bones.
e. Rear attachment of udder.
f. Side to side balance of udder and teat spacing.
g. Straightness of feet and legs.

4. Front view.

a. Dairy character of head.
b. Angularity of withers.
c. Smoothness of neck and shoulders.
d. Width between front legs.
e. Width of barrel.
f. Straightness of feet and legs.

V. Important Factors in Selecting Horses.

A. Factors. (Transparency 20)

1. Balance. (Transparency 21)

a. Several points to measure for equal distance.

1) Point of shoulder to top of withers.
2) Length of the back and loin.
3) Point of hip to rear point of buttock.
4) Center of neck from shoulder to head.

b. Length of foreleg from bottom of shoulder to pastern and the length from the top of the withers to the floor of the chest should be equal.
c. Slope of shoulders and the pastern and hoof should both be approximately 45°.

2. Head and neck.
    a. Wide forehead.
    b. Large flaring nostrils.
    c. Strong jaw.
    d. Clean in throat latch.
    e. Neck smoothly attached to shoulder.

3. Forequarter.
    a. Heavily muscled.
    b. Full forerib and deep heart girth.
    c. 45° slope to shoulder.
    d. Withers as high or higher than rump.

4. Back and middle.
    a. Short back, correctly turned and heavily muscled.
    b. Good spring of rib.
    c. Long clean underline, not low slung.
    d. Broad strong loin.

5. Rear quarter.
    a. Smooth and heavily muscled rump.
    b. Wide and level at hip bones.
    c. Bulging stifle.
    d. Broad muscular gaskin.

6. Feet and legs. (Transparencies 22 and 23)
    a. Rounded hoof of adequate size.
    b. Hoof and pastern sloped at 45° angle.
    c. Large fetlock.
    d. Cannon of medium length, not too long.
    e. Hocks evenly placed, not too far apart or close together.

7. Action.
    a. Should pick up feet freely.
    b. Should move forward with good clearance.
    c. Should place foot down squarely.
    d. Legs should all move in a straight line viewed from rear.
    e. Good action in walk usually indication that action also good at faster gaits.

B. Procedure.

1. Similar to other livestock classes.

a. Side, rear, and front view should be made from about 6 meters (20 ft.).
b. Fourth step involves an up close inspection.

2. Much closer attention should be given to the animal moving.

a. Inspect from front and rear.
b. Animal should both walk and trot.

VI. Important Factors in Selecting Poultry.

A. Factors for laying hens.

1. Head.

a. Strong.
b. Moderately long.
c. Flat on top, filled in forward.
d. Free of wrinkles in face.
e. Large comb with good color.
f. Large bright eyes.

2. Body conformation. (Transparency 24)

a. Angular form.
b. Broad and deep in the breast and long in the keel.
c. Back should be straight, long, and wide.
d. Neck should blend in smoothly with the body.
e. Well-fleshed thigh and leg.
f. Should have at least 2-3 fingers' spread between pubic bones. (Transparency 25)
g. Should have at least 4-5 fingers' spread between pubic bones and keel. (Transparency 26)

3. Plumage condition and skin color.

a. Fully feathered with good quality plumage.
b. Shanks should show good healthy color.

4. Feet and toes.

a. Well-balanced on legs.
b. Feet and toes should be straight and well-formed.

5. Sexual maturity.

a. Evidenced by development of head and comb.
b. Less important factor.

B. Factors for broilers and poults.

1. Body conformation. (Transparencies 27 and 28)

    a. Wide breast carrying back through the keel.
    b. Keel and back should be parallel.
    c. Broad and straight back.
    d. Bulging thigh with heavy-meated drumstick.

2. Fleshing.

    a. High percentage of muscle tissue.
    b. Broilers should have about 29% breast and 32% drumstick and thigh.
    c. Poults should have about 31% breast and 27% drumstick and thigh.

3. Finish.

    a. Refers to amount of fat.
    b. Should be evenly distributed over the entire body.
    c. Should be abundant but not to the point of waste.

4. Pin feathers.

    a. Should be free of protruding pin feathers, those that are out from under the skin, not matured but partially formed.
    b. Should be practically free of nonprotruding pin feathers, those that have not grown enough to come through the skin.

5. Birds should not have any physical defects or discolorations, bruises, or disjointed or broken bones.

VII. Livestock Judging Contests.

A. Most contests have 6 classes of four animals, 2 each of beef, swine, and sheep. Dairy cattle and horse contests are usually held separately.

B. Contestants must place each class in order from best to worst.

C. Reasons are given to compare differences in the animals judged, one class of each species.

D. After each class is placed, the contestant fills out a card and gives it to a judge.

E. Notes must be taken on reason classes so the contestant can review each class.

F. After all classes are placed, contestants take turns presenting their reasons to a judge. Each contestant gets a break between each class to study their notes on the upcoming class.

VIII. Giving Reasons.

A. Purpose of giving reasons.

1. Helps you develop a system of analyzing a class of livestock.

2. Makes you think and express yourself clearly.

3. Improves your speaking voice and poise.

4. Develops your memory.

B. Organizing reasons.

1. After placing a class on which reasons will be given, each contestant must organize his or her reasons.

2. Each class should be divided into 3 pairs, a top, middle, and bottom.

(Note: Assume a placing of 1-2-3-4)

3. Start by listing reasons why 1 was placed on top of the class.

4. Next compare the top pair, 1 and 2.

a. Reasons for placing 1 over 2.
b. Grants for 2 over 1, pointing out advantages of 2 over 1.
c. Criticisms of 2.

5. Compare the middle pair, 2 and 3, in the same manner.

6. Continue to the bottom pair in the same way.

C. Presenting the reasons.

1. Review your notes while waiting to give your reasons. Try to picture the class in your mind. Do NOT memorize the reasons.

2. When your turn comes to give reasons, stand 3 to 4 meters (10-13 ft.) from the judge, squarely on both feet with hands behind your back.

3. Look directly at the judge and speak slowly in a clear forceful voice.

4. Begin by stating what the class is and how you placed it, "I placed this class of Hereford heifers 3-1-2-4."

5. Discuss in order the top animal and each pair. Start with the most important points and continue to lesser differences.

6. Do not give all of your attention to the top pair; the bottom and middle are just as important. Close pairs may require more time to discuss.

7. Use comparative terms, "longer, wider" instead of "long" and "wide".

8. Refer to each animal by its number alone, do not say "Number 1 steer".

Student Learning Activities:

1. Have students read the 4-H Livestock Judging Guide, available from the Cooperative Extension Service.

2. Have the student compare the class of 3 steers for body type. (Transparencies 29-31). Have them place the 4 dairy cows (Transparency 32). Correct placings are: 3-2-4-1.

3. Show any of the following slide tape programs available from the Cooperative Extension Service, North Dakota State University. They should be ordered through your local county extension agent.

   Judging Market Lambs

   Pointers For Judging Holsteins

   Judging Horses

   Judging Paint Horses

   Oral Reasons

4. Many breed associations have films or slides on livestock judging. A few are listed below.

   The American Hereford Assoc.
   715 Hereford Drive
   Kansas City, MO 64105

   American Aberdeen Angus Breeders Assoc.
   3201 Frederick Blvd.
   St. Joseph, MO 64506

   American Polled Hereford Assoc.
   4700 East 63rd St.
   Kansas City, MO 64130

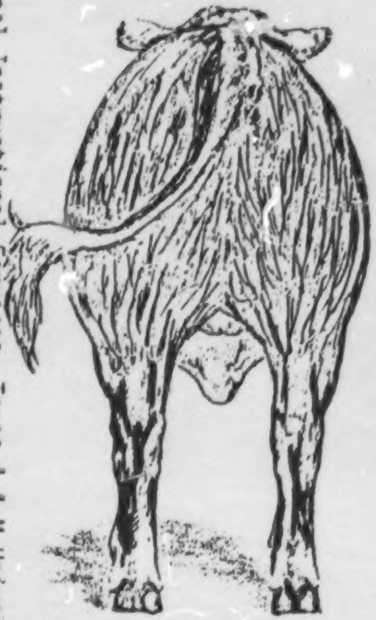
Holstein-Friesian Assoc. of America
Box 808
Brattleboro, VT 05301

The American Quarter Horse Assoc.
Amarillo, Texas 79168

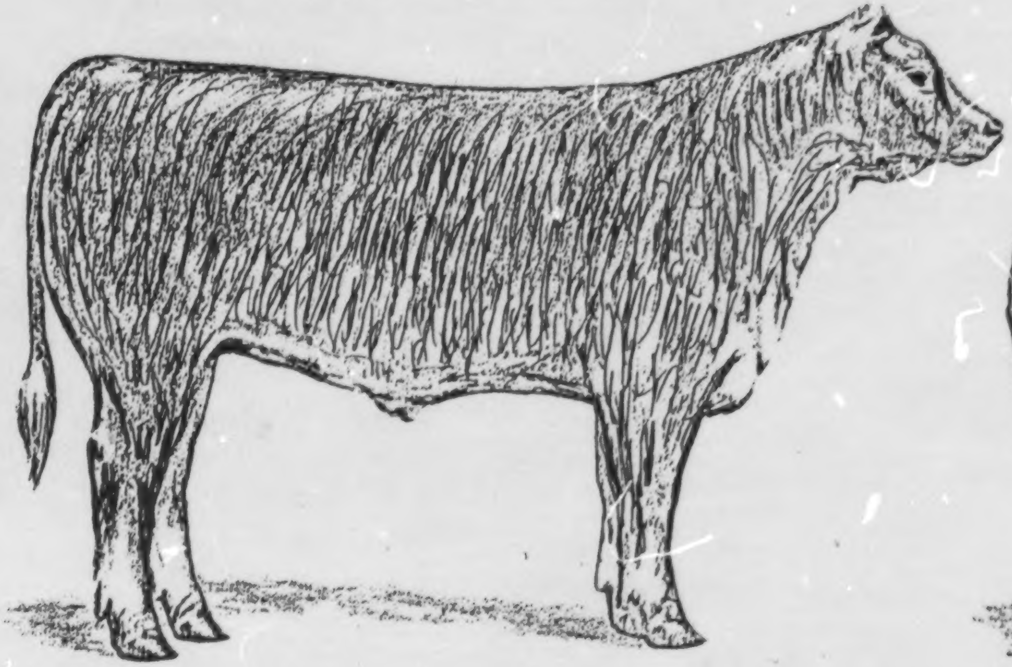
5. Have the students place some sample classes using slides and/or pictures. They can give oral or written reasons on some of the classes.

6. Have the students place some live classes and give oral reasons. Encourage the students to try out for the FFA livestock judging teams.

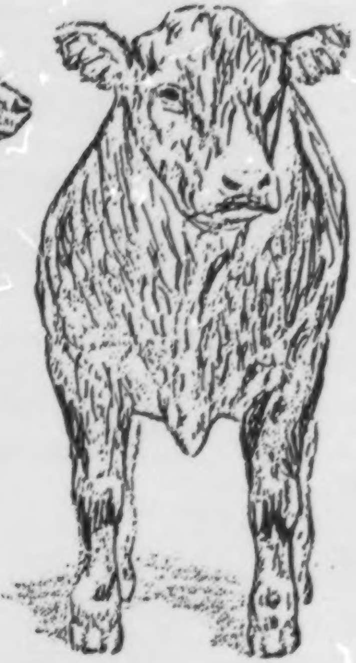
IDEAL BEEF CONFORMATION



REAR VIEW



SIDE VIEW

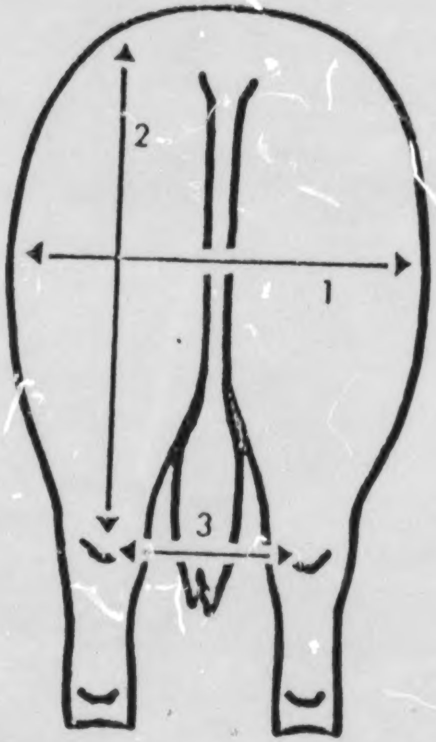


FRONT VIEW

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

A-3-5
TM 1

REAR VIEW IS GOOD INDICATION OF MUSCLING

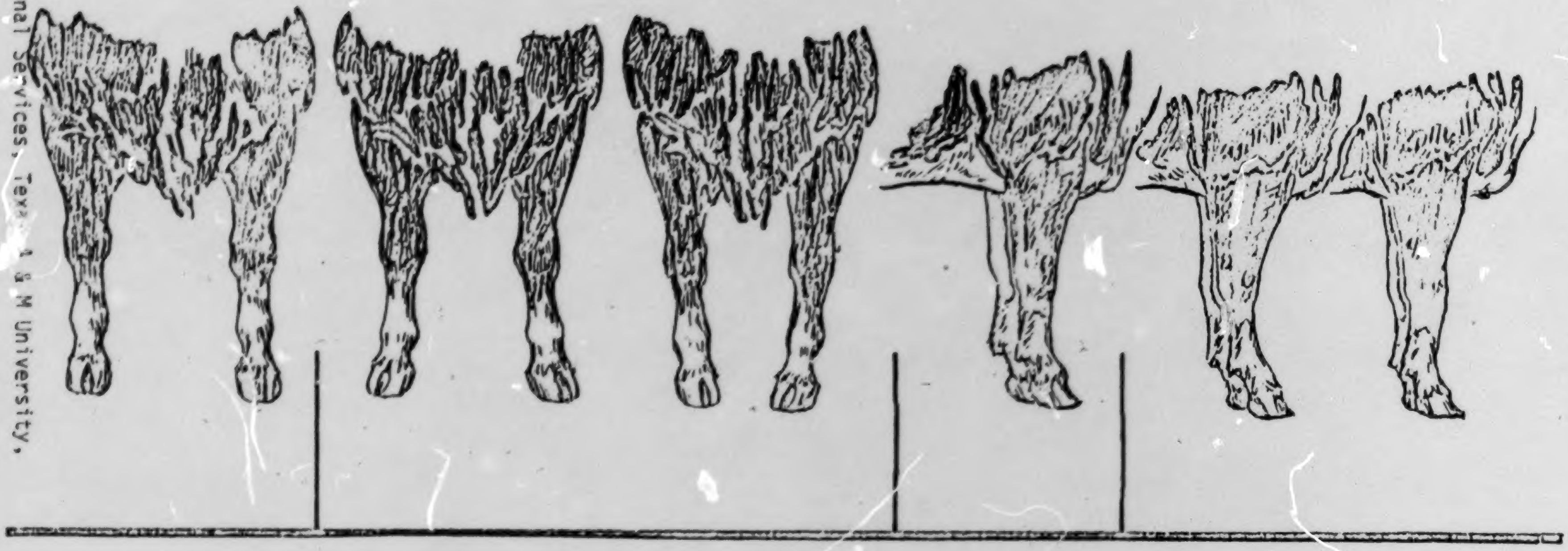


Things to look for:

1. Width of round
2. Depth of round
3. Width between legs

Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

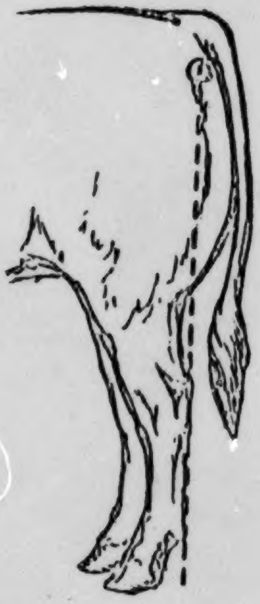
COMPARISON OF CORRECT WITH DEFECTIVE FRONT LEGS



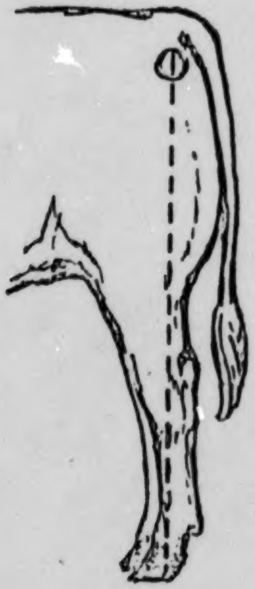
Courtesy of Vocational Instructional Services, Texas A & M University,
College Station, Texas

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

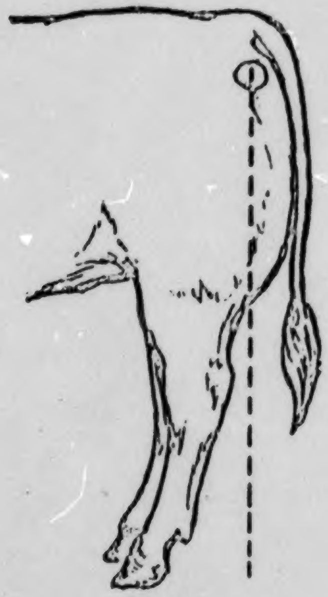
LEGS SHOULD BE STRAIGHT FROM CENTER OF ROUND TO HOCK TO FOOT



CORRECT



INCORRECT

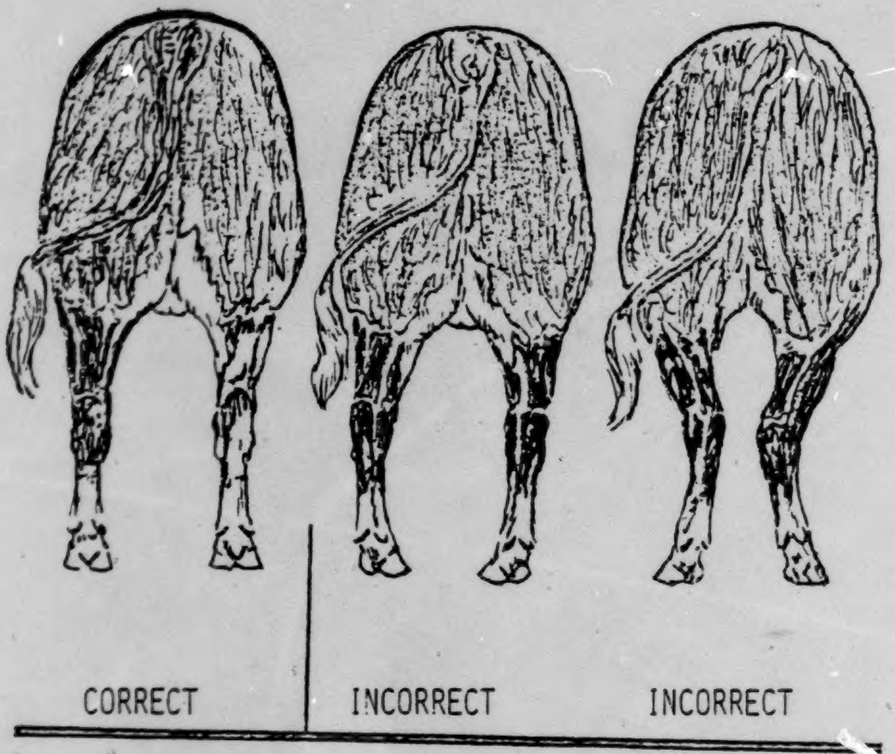


INCORRECT

115

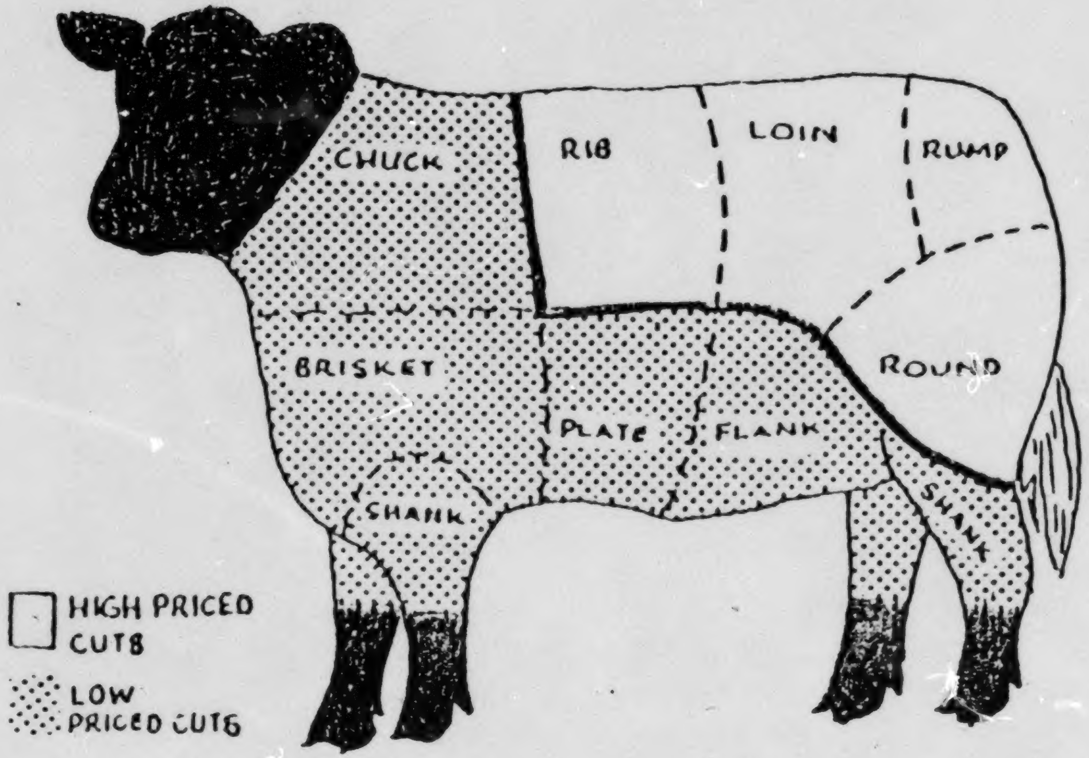
116

LEGS SHOULD BE STRAIGHT FROM CENTER OF ROUND TO HOCK TO FOOT


CORRECT
INCORRECT
INCORRECT

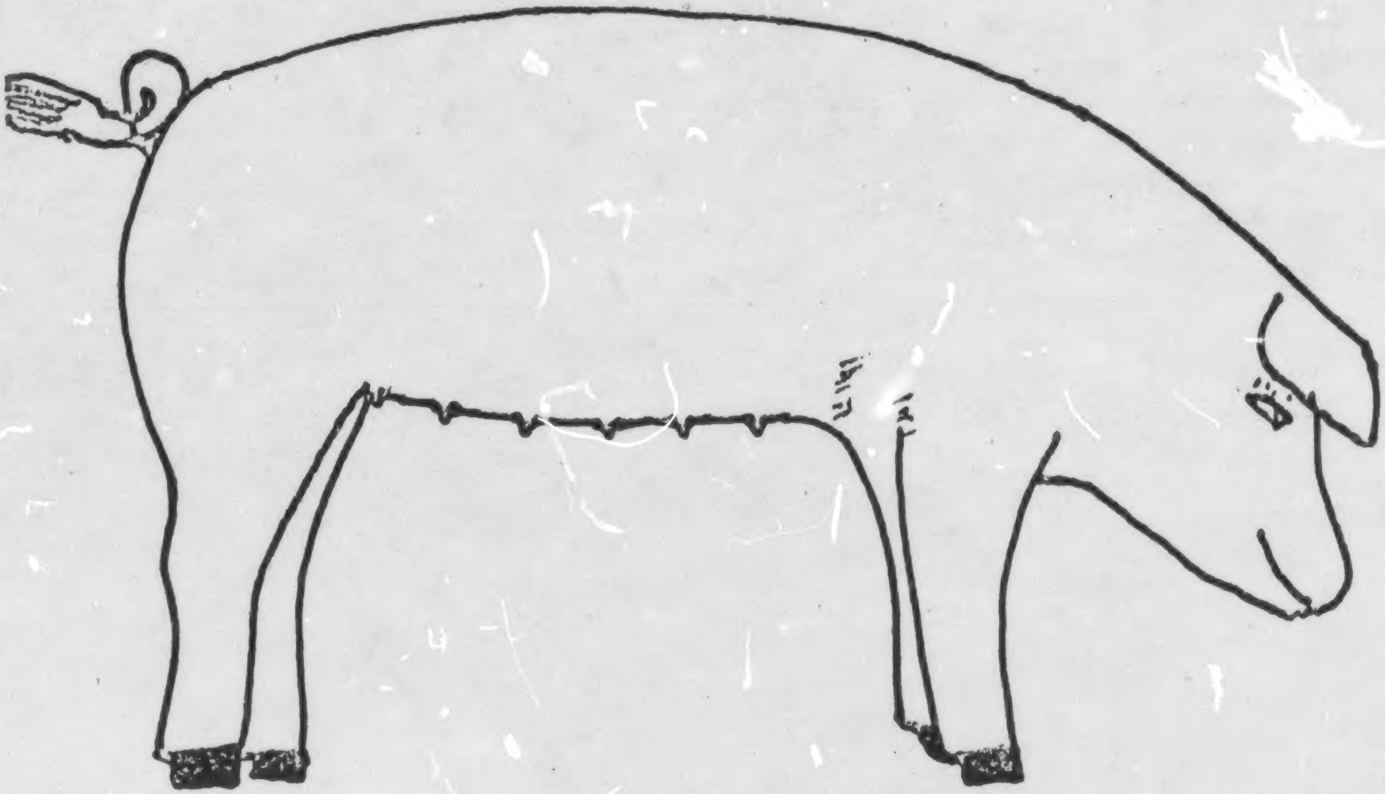
Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

GIVE MAJOR CONSIDERATION TO THE HIGH PRICE CUTS


CHUCK
RIB
LOIN
RUMP
BRISKET
ROUND
PLATE
FLANK
SHANK
SHANK
HIGH PRICED CUTS
LOW PRICED CUTS

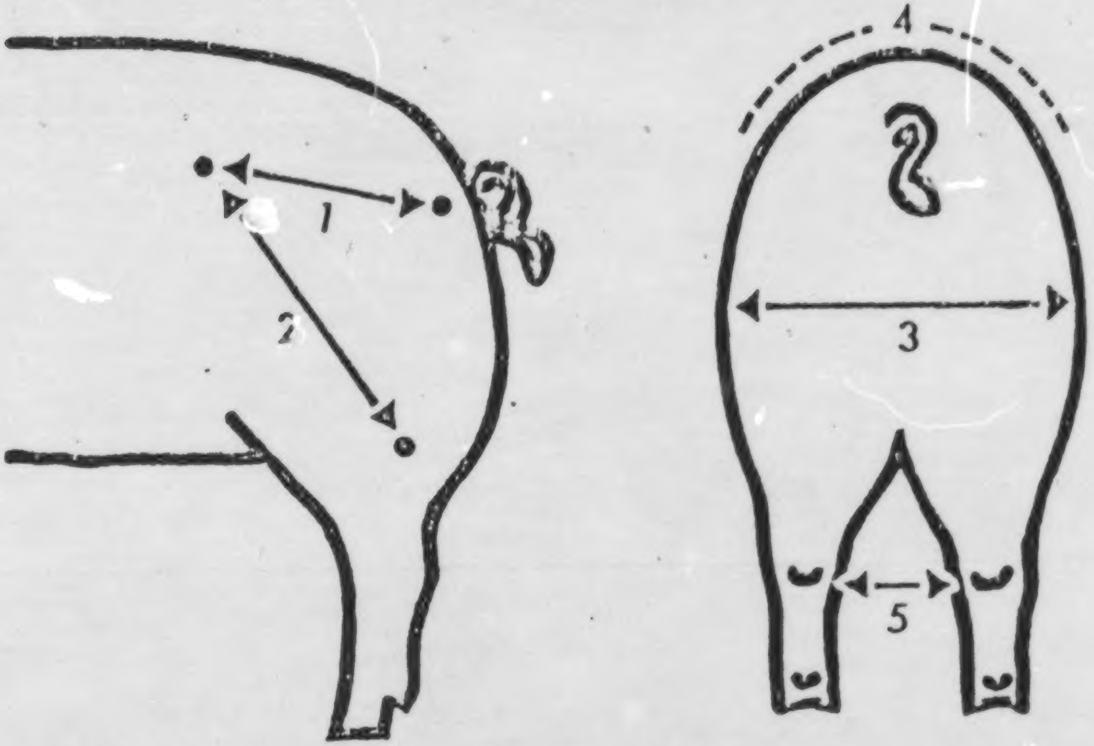
Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

IDEAL SWINE CONFORMATION



Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

HAM IS GOOD INDICATION OF MUSCLING

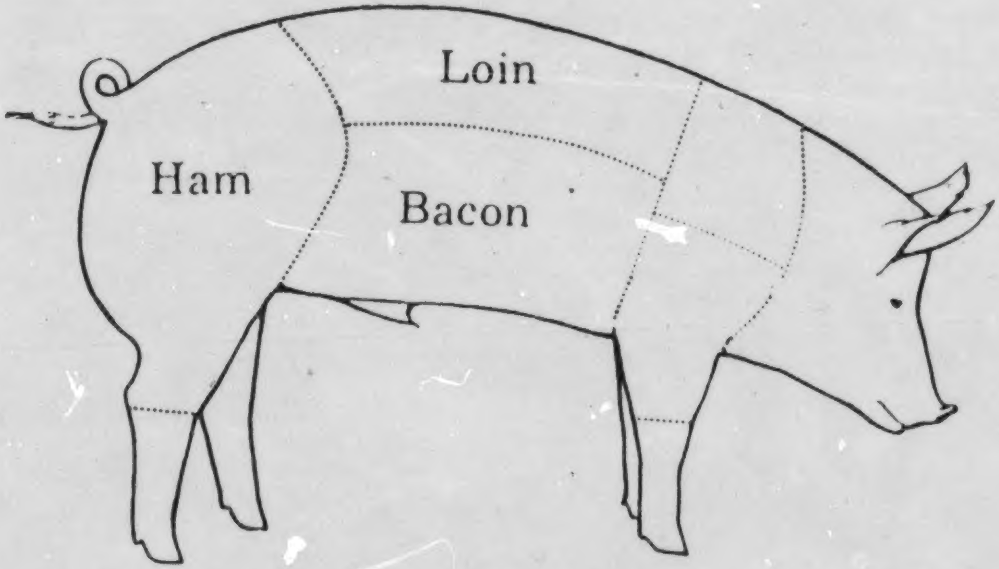


Things to look for:

1. length of ham
2. depth of ham
3. width through center of ham
4. correct turn over the top
5. width between hind legs

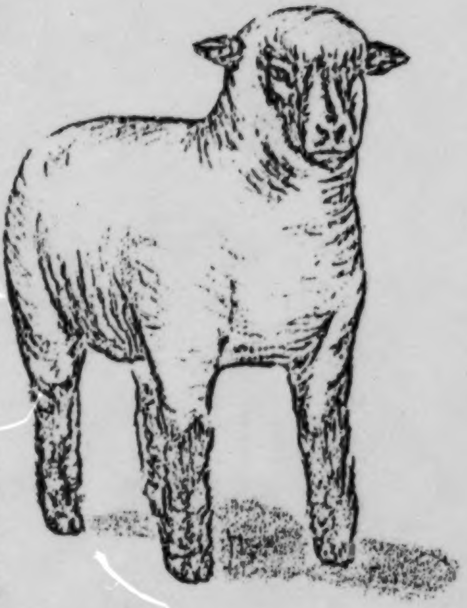
Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

GIVE MAJOR CONSIDERATION TO HIGH PRICE CUTS

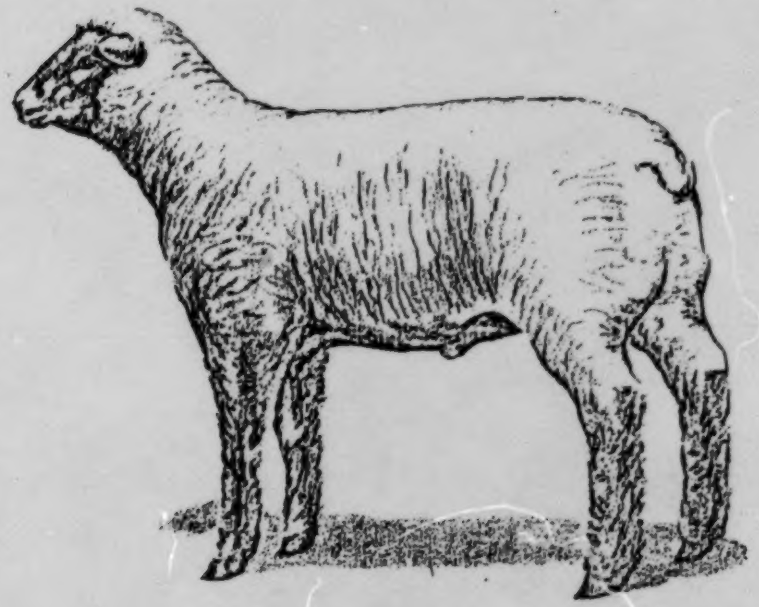


Courtesy of the Cooperative Extension Service, North Dakota State University,
Fargo, North Dakota

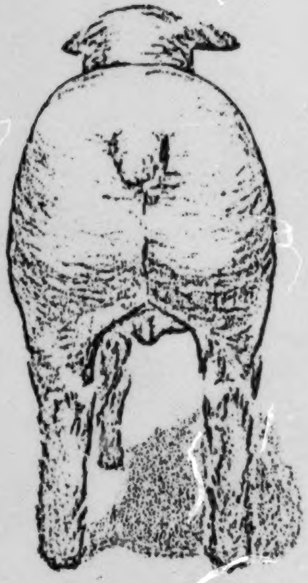
IDEAL CONFORMATION



FRONT VIEW



SIDE VIEW



REAR VIEW

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

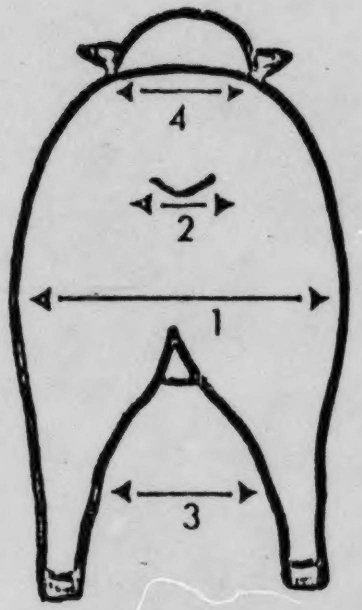
126

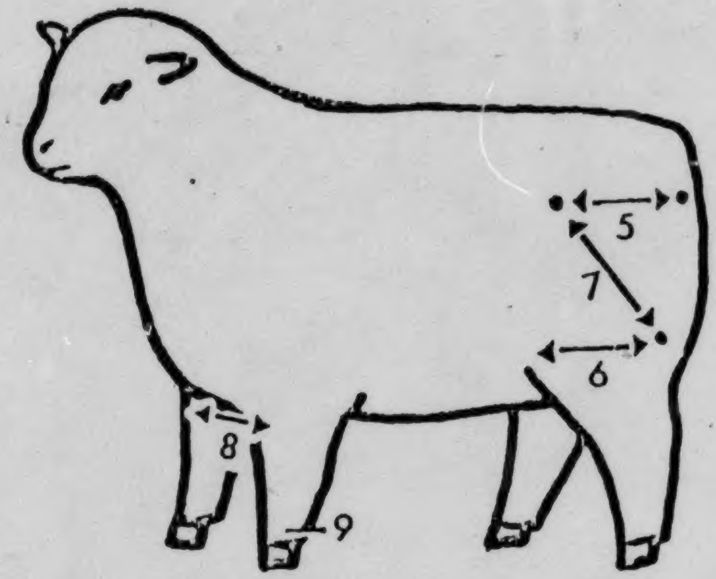
127

A-3-5
TM 10

Courtesy of the Cooperative Extension Services, North Dakota State University,
Fargo, North Dakota

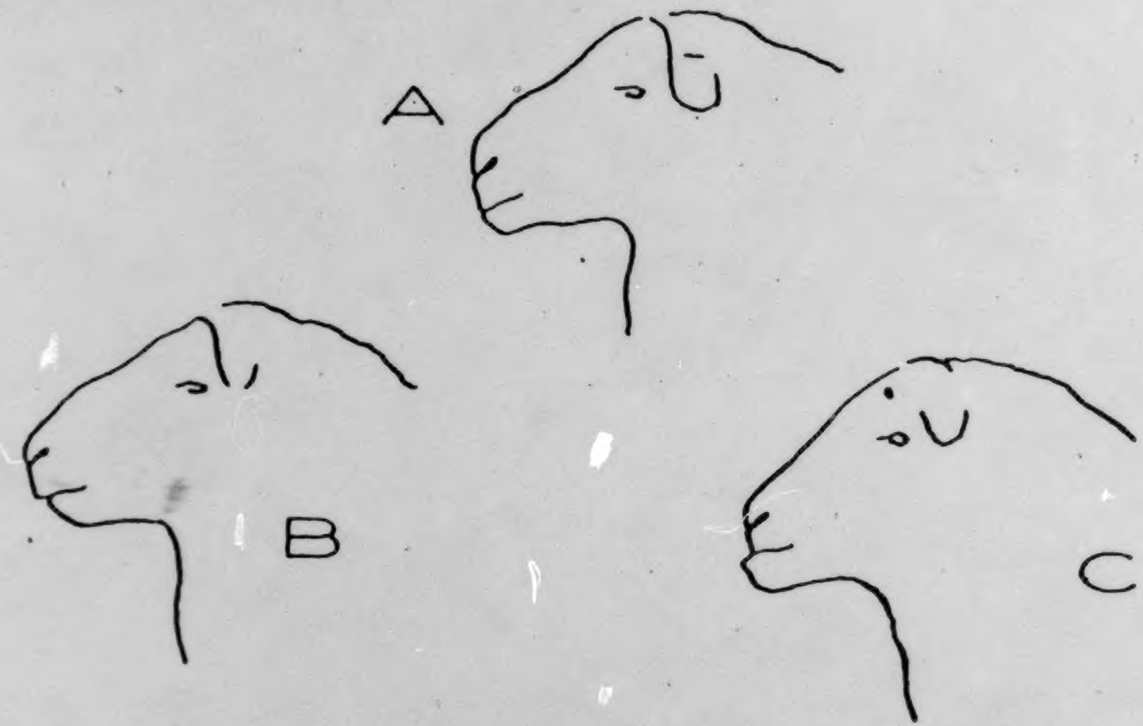
IMPORTANT POINTS IN SELECTING SHEEP





Look for width —
1. at center of leg
2. at the dock
3. between hind legs
4. over back and loin

Look for —
5. long rump
6. long, bulging stifle
7. depth of leg
8. width at chest
9. heavy bone

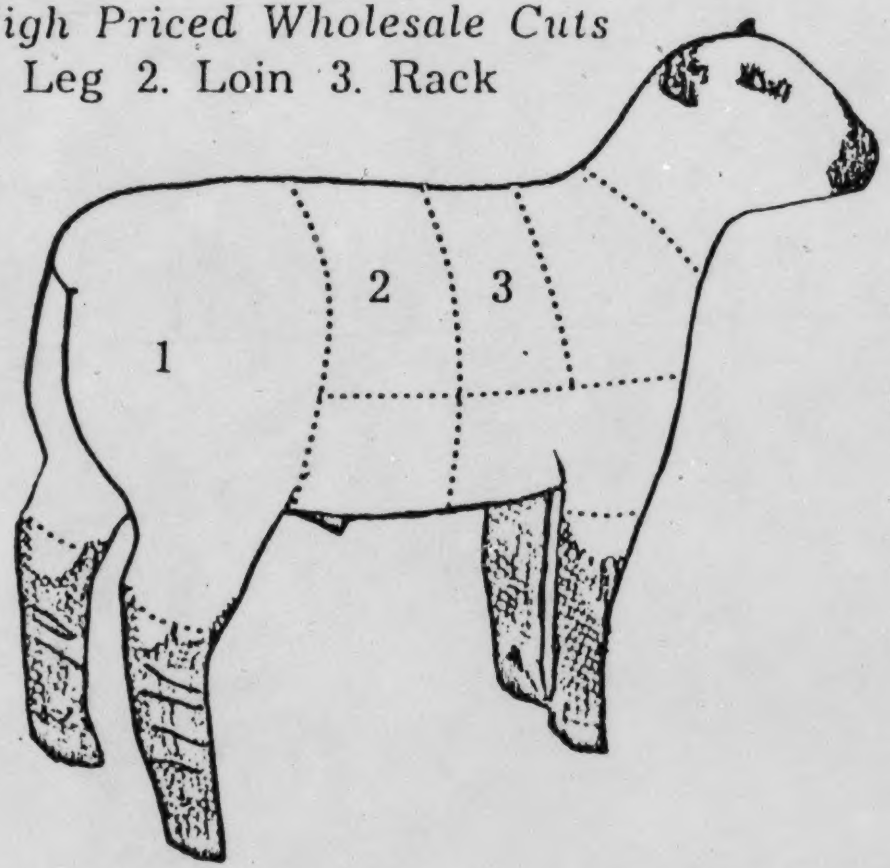


Normal (A), Overshot (B) and Undershot (C) Jaws of Sheep

Courtesy of the Cooperative Extension Service, North Dakota State University,
Fargo, North Dakota

High Priced Wholesale Cuts

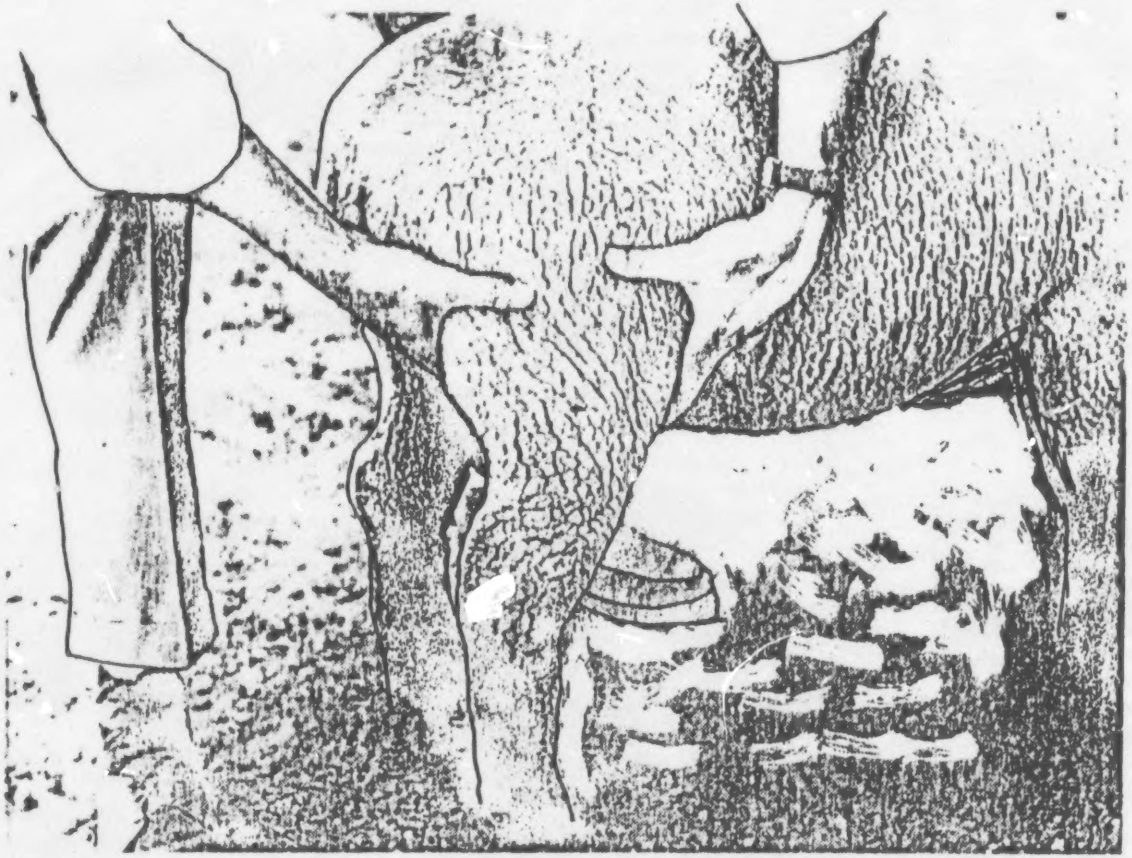
1. Leg 2. Loin 3. Rack



GIVE MAJOR CONSIDERATION TO THE HIGH PRICE CUTS

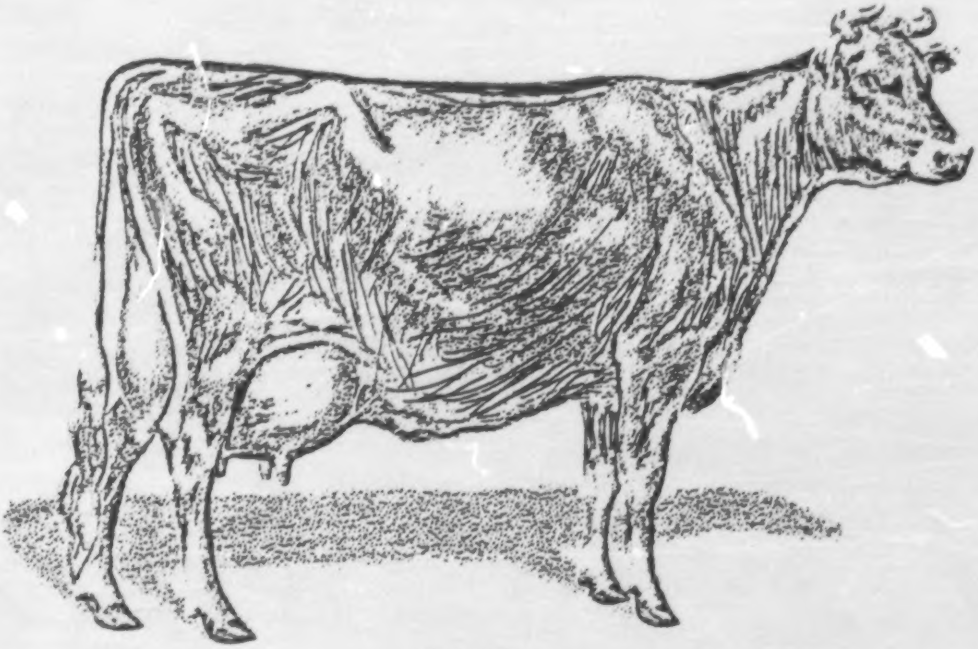
Courtesy of the Cooperative Extension Service, North Dakota State University,
Fargo, North Dakota

GRASP LEG AT STIFLE TO DETERMINE MEATINESS OF THE LEG

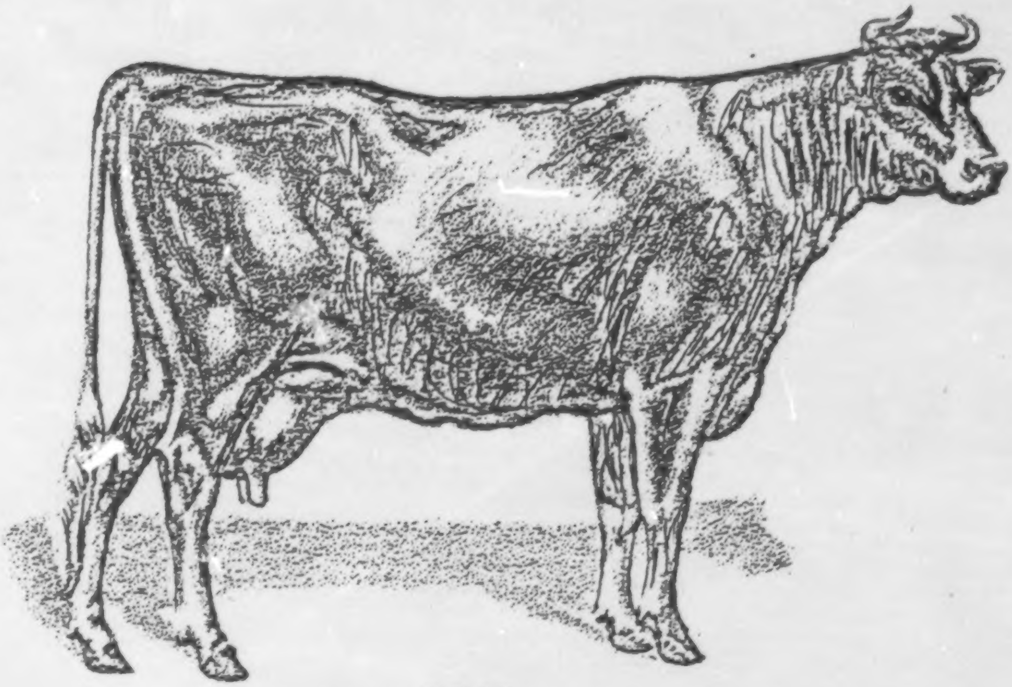


Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

DAIRY CHARACTER



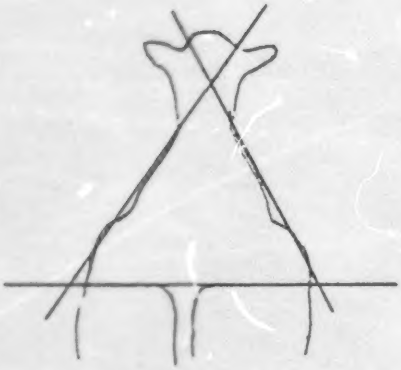
GOOD



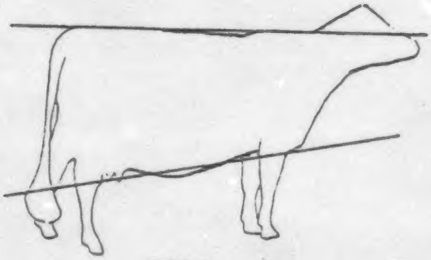
POOR

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

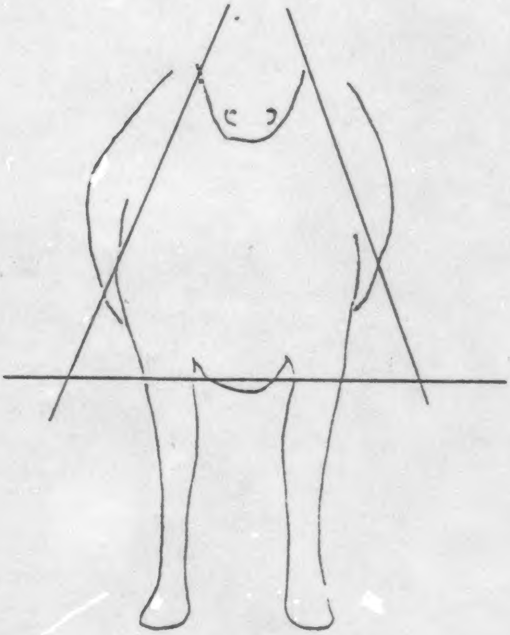
BODY SHOULD SHOW ANGULARITY



REAR



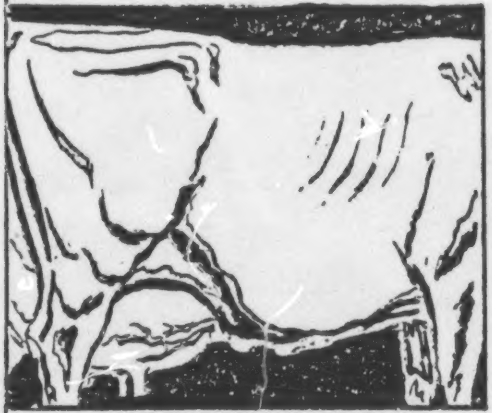
SIDE



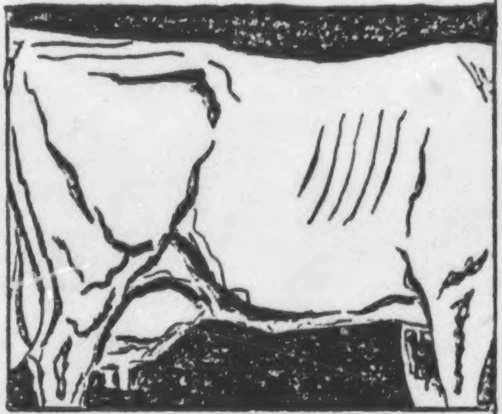
FRONT

Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

BODY CAPACITY



GOOD



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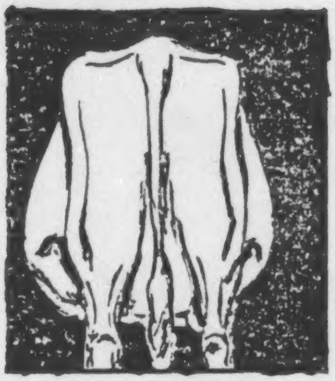
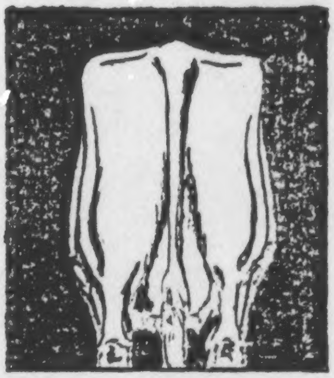
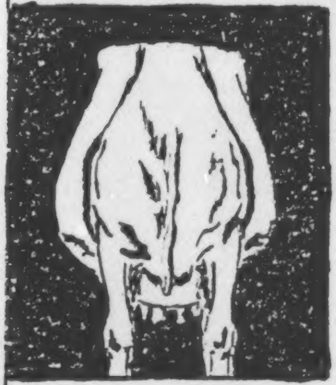


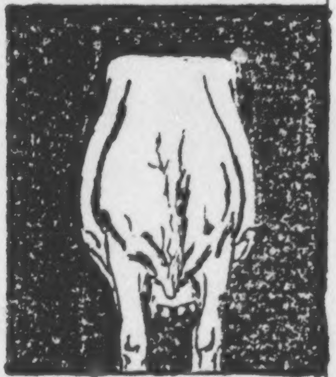
GOOD



POOR



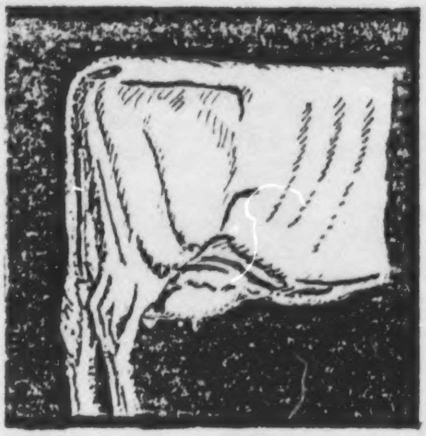
GOOD



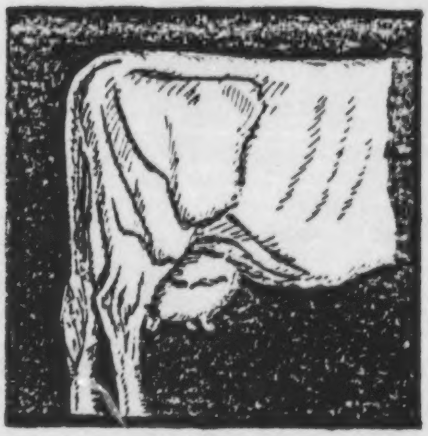
POOR

Courtesy of Vocational Instructional Services, Texas A & M University,
College Station, Texas

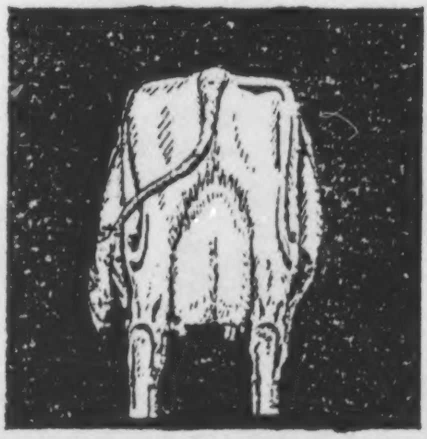
MAMMARY DEVELOPMENT



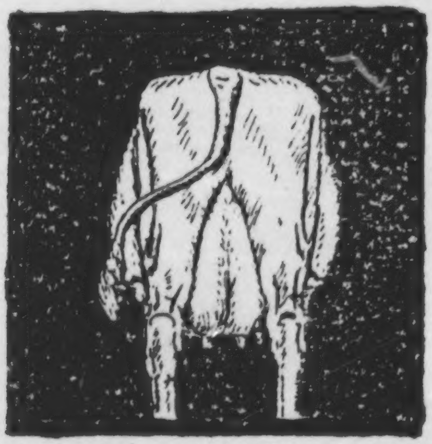
GOOD UDDER AND
FORE UDDER
ATTACHMENT



POOR UDDER AND
FORE UDDER
ATTACHMENT

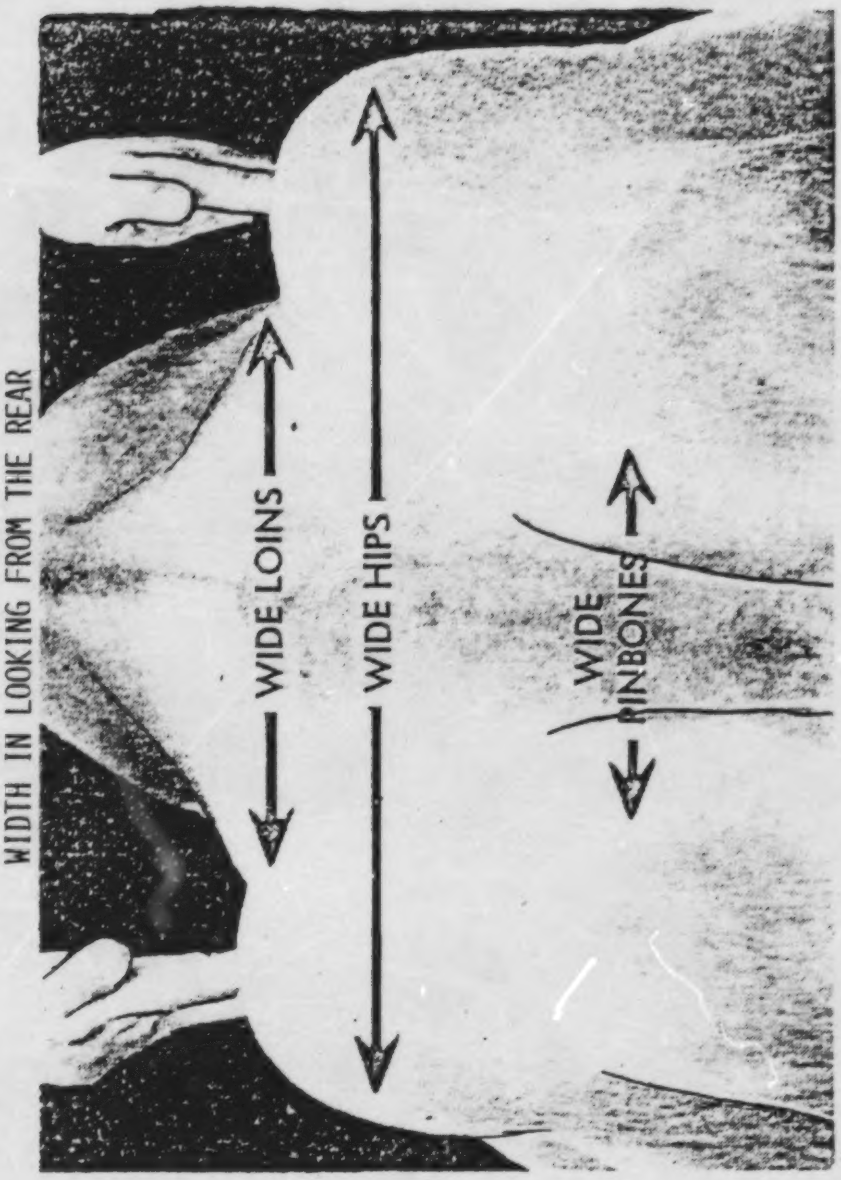


GOOD UDDER AND
REAR UDDER
ATTACHMENT



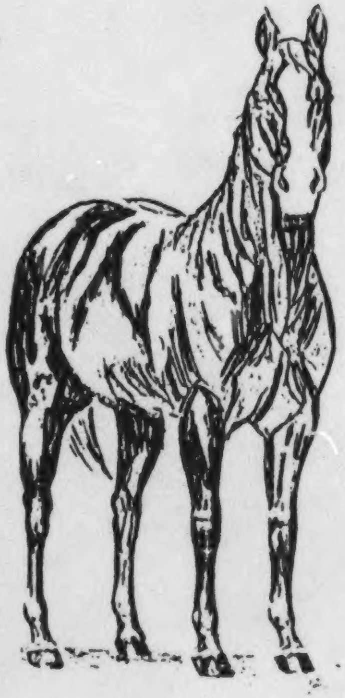
POOR UDDER AND
REAR UDDER
ATTACHMENT

Courtesy of Vocational Instructional Services, Texas A & M University,
College Station, Texas

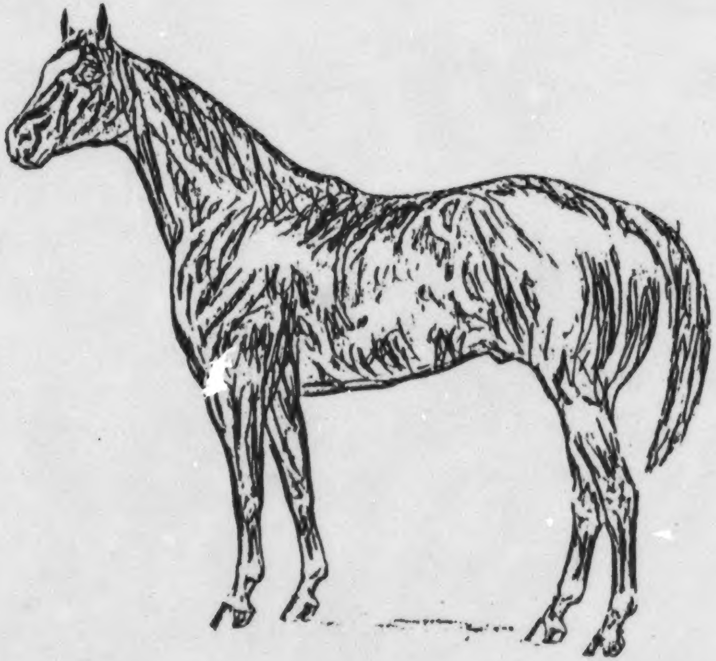

WIDTH IN LOOKING FROM THE REAR
WIDE LOINS
WIDE HIPS
WIDE PINBONES

Courtesy of the Cooperative Extension Service, North Dakota State University, Fargo, North Dakota

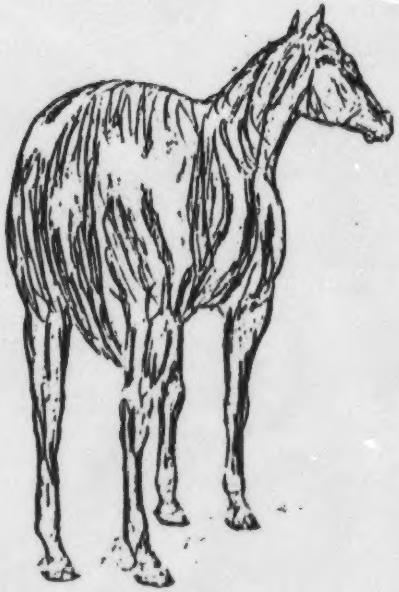
IDEAL STOCK HORSE CONFORMATION



FRONT VIEW



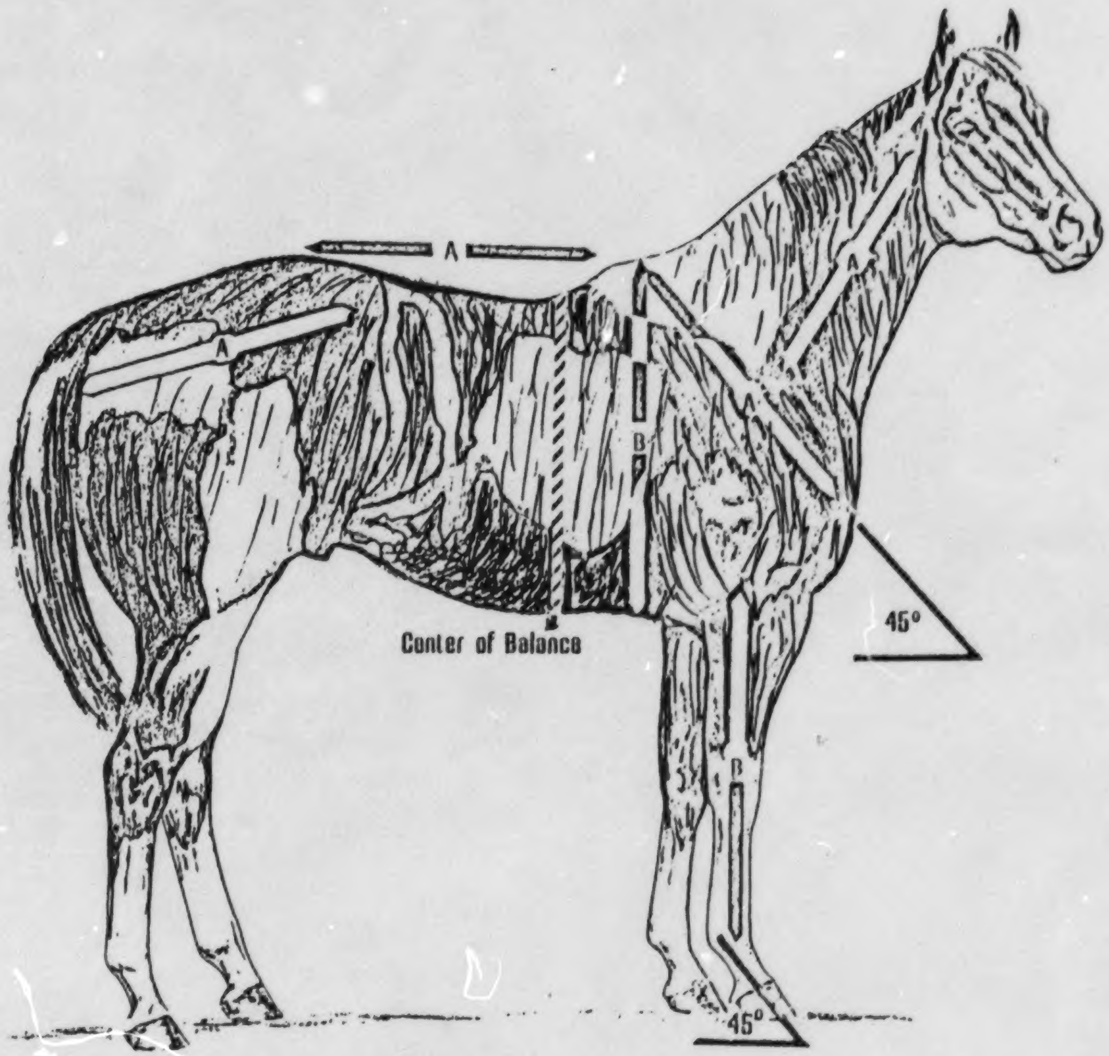
SIDE VIEW



REAR VIEW

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

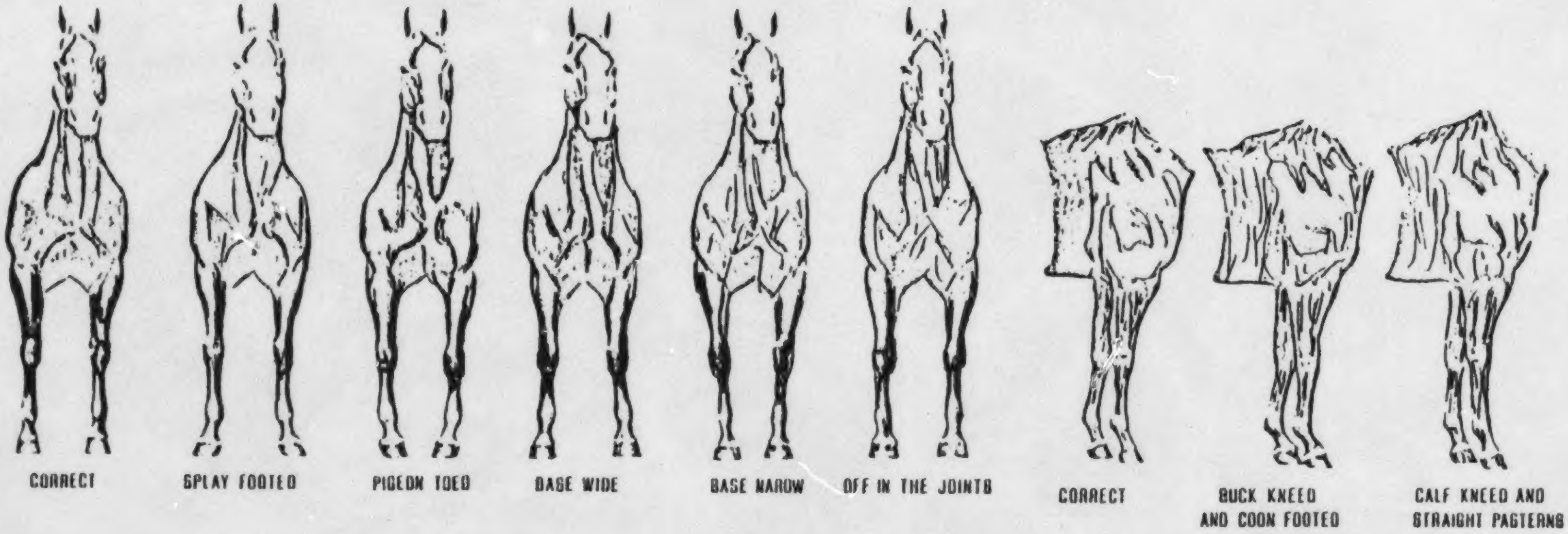
Correct Balance In Conformation


A
A
A
A
B
B
Center of Balance
45°
45°

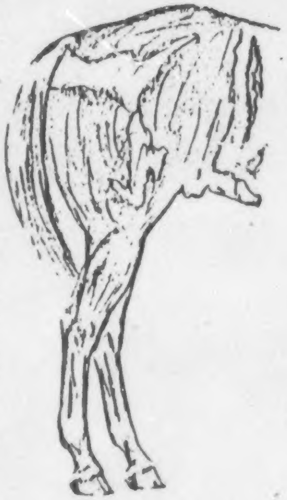
Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

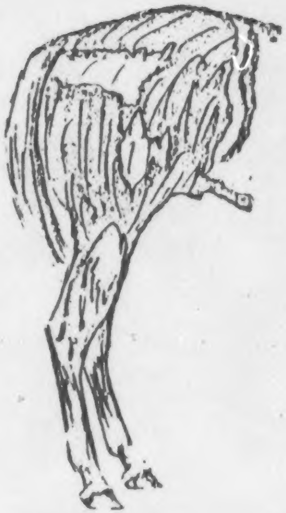
Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

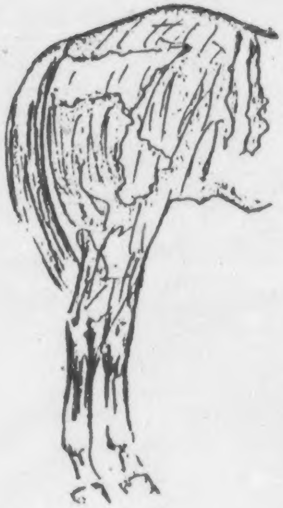
COMMON CONFORMATION DEFECTS (front legs)

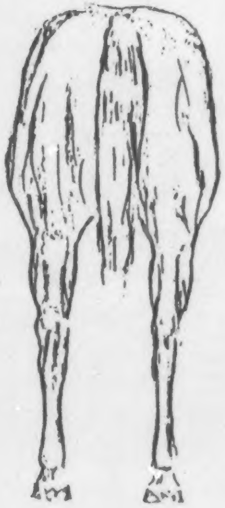

CORRECT
SPLAY FOOTED
PIGEON TOED
BASE WIDE
BASE NAROW
OFF IN THE JOINTS
CORRECT
BUCK KNEED AND COON FOOTED
CALF KNEED AND STRAIGHT PASTERNS

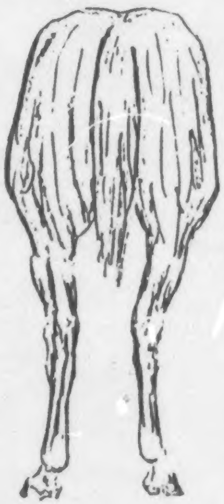
COMMON CONFORMATION DEFECTS (hind legs)

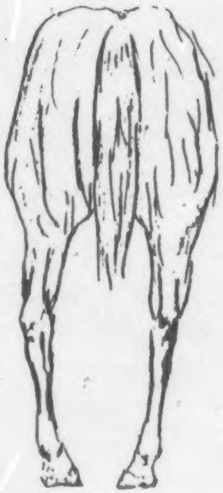

CORRECT


SICKLE HOCKED


POST LEGGED

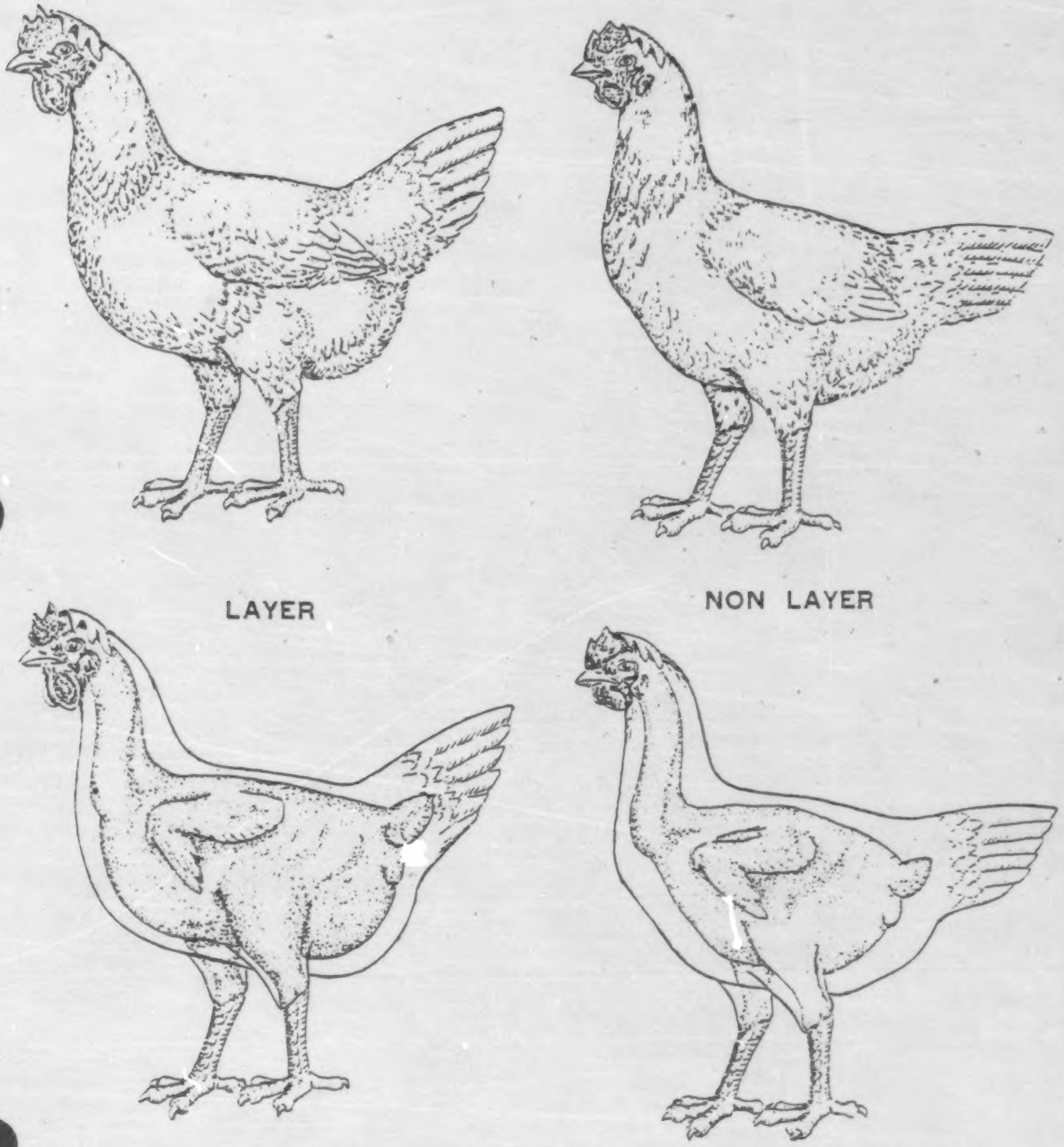

CORRECT


COW HOCKED

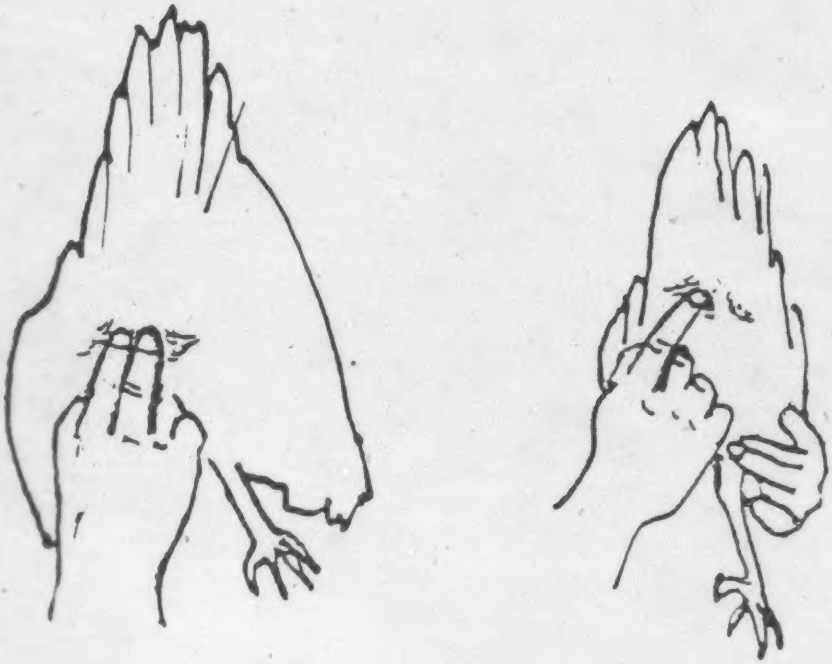

BANDY LEGGED

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

LAYER CONFORMATION

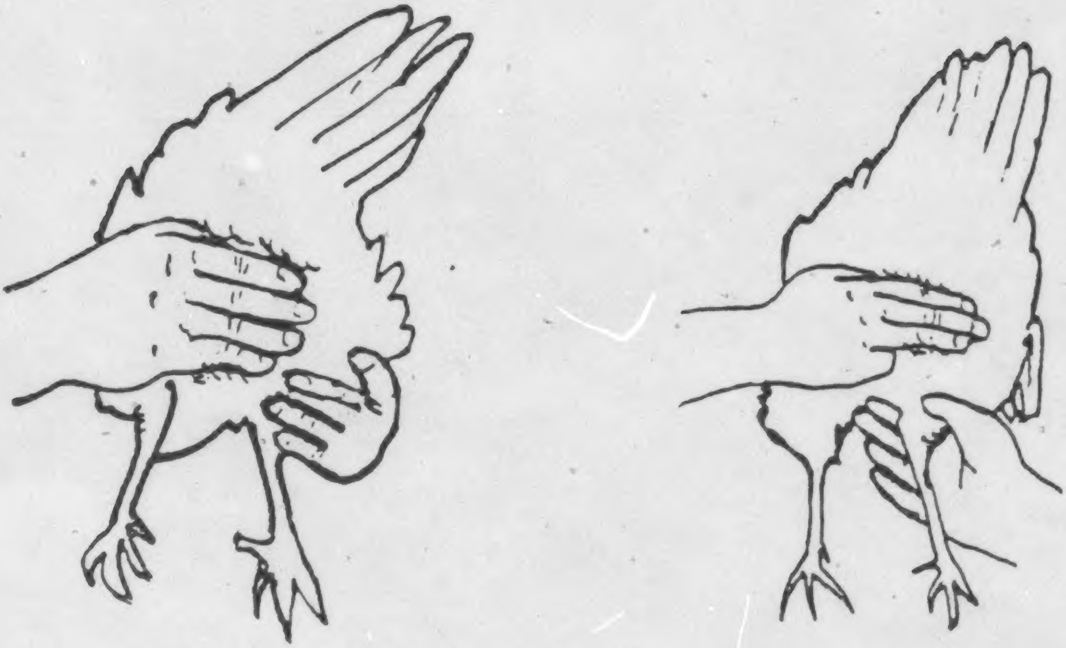

LAYER
NON LAYER

Courtesy of Vocational Instructional Services, Texas A & M University,
College Station, Texas



CHECK DISTANCE BETWEEN PIN BONES

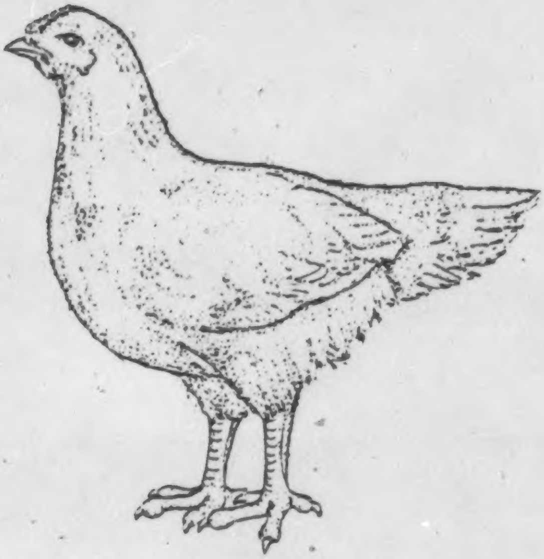
Source: Caring For The Small Laying Flock. Vocational Agriculture Service, University of Illinois at Urbana-Champaign



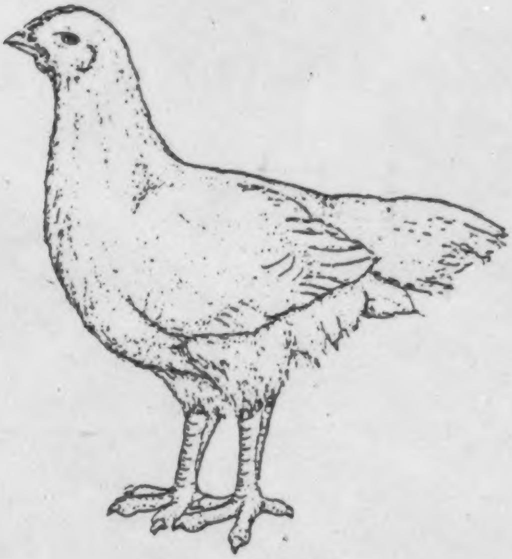
CHECK DISTANCE BETWEEN KEEL AND PIN BONES

Source: Caring For The Small Laying Flock. Vocational Agriculture Service, University of Illinois at Urbana-Champaign

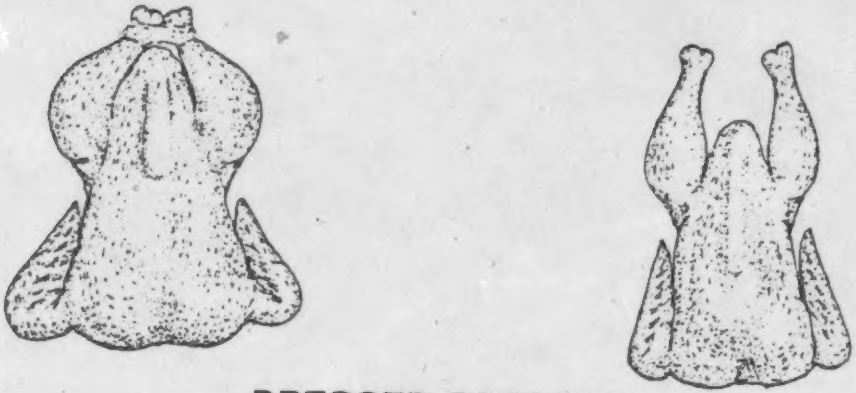
BROILER CONFORMATION



DESIRABLE



UNDESIRABLE

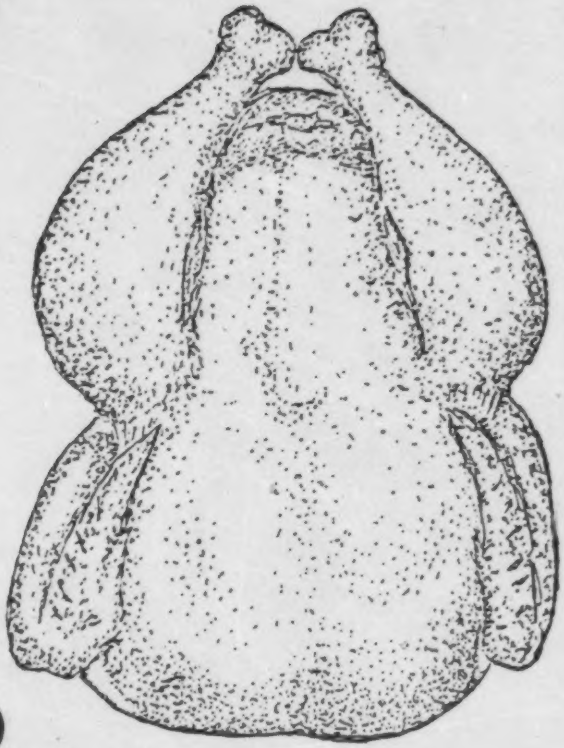


DRESSED CARCASS

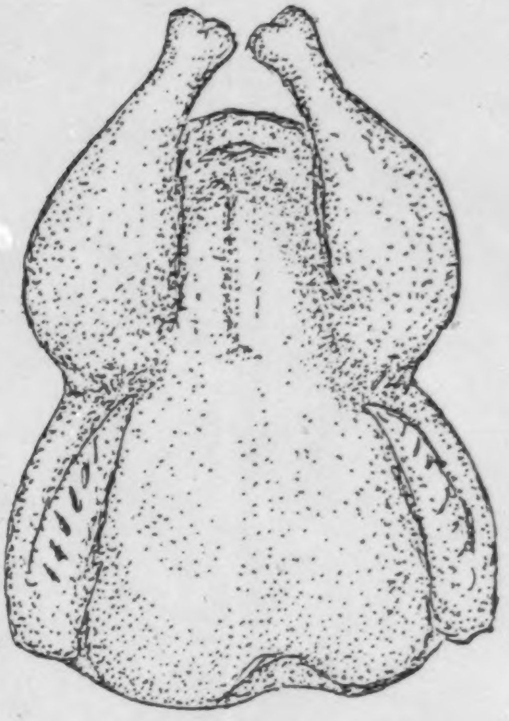
CROSS SECTION OF BREAST

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

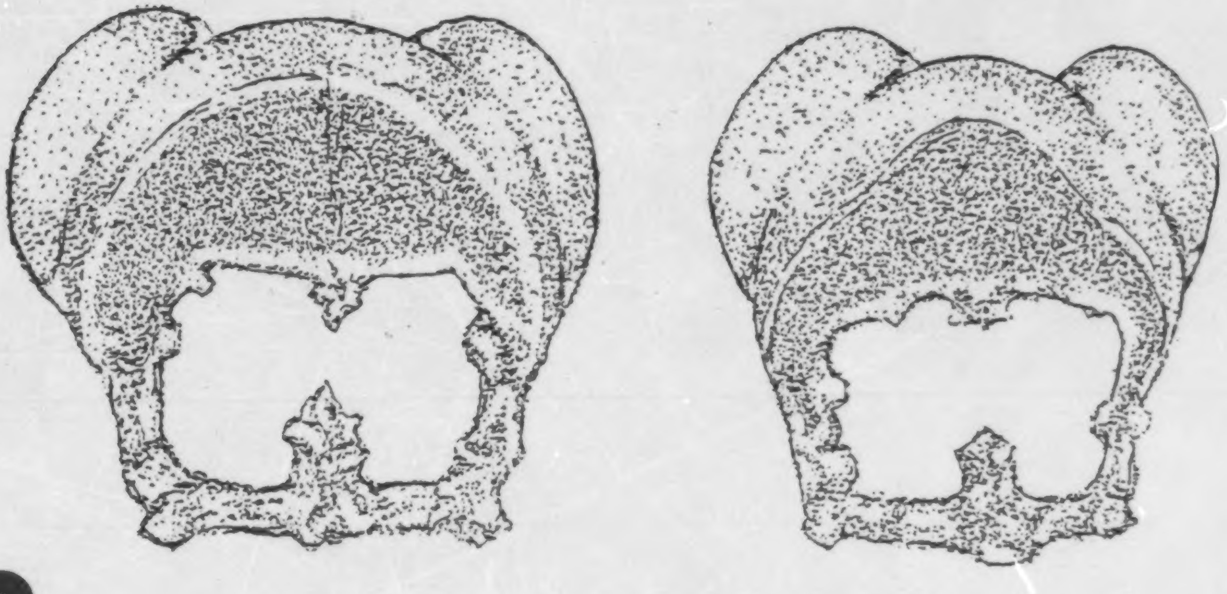
TURKEY CONFORMATION



DESIRABLE



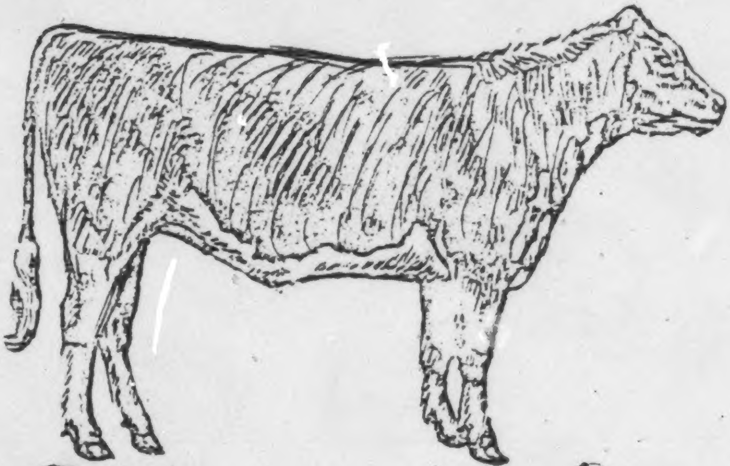
UNDESIRABLE



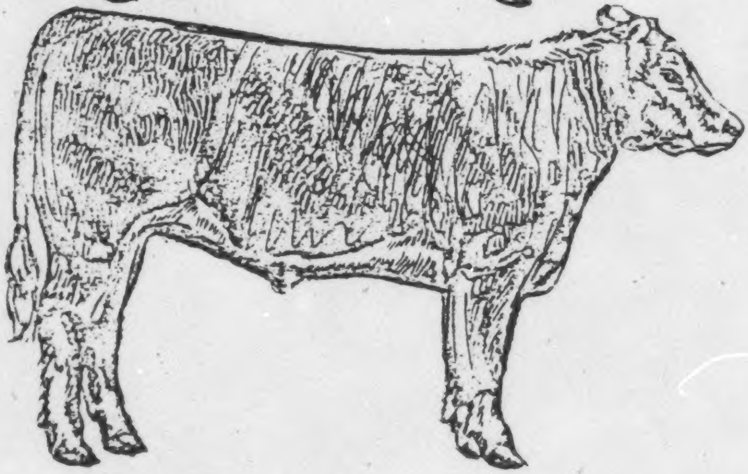
CROSS SECTION OF BREAST

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

COMPARISON OF LIVE STEERS
(SIDE VIEW)



STEER 1



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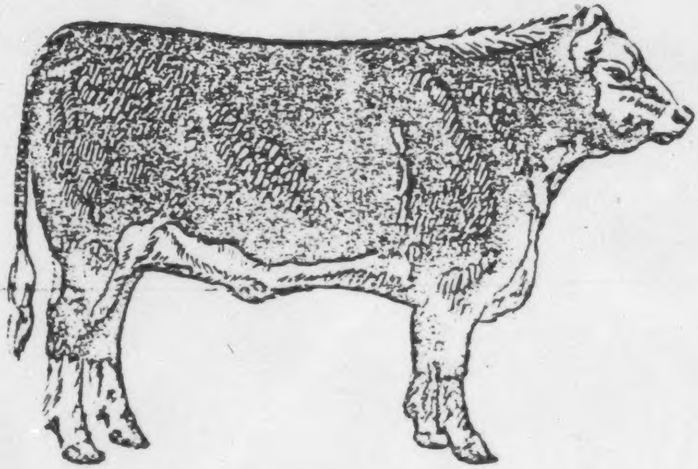
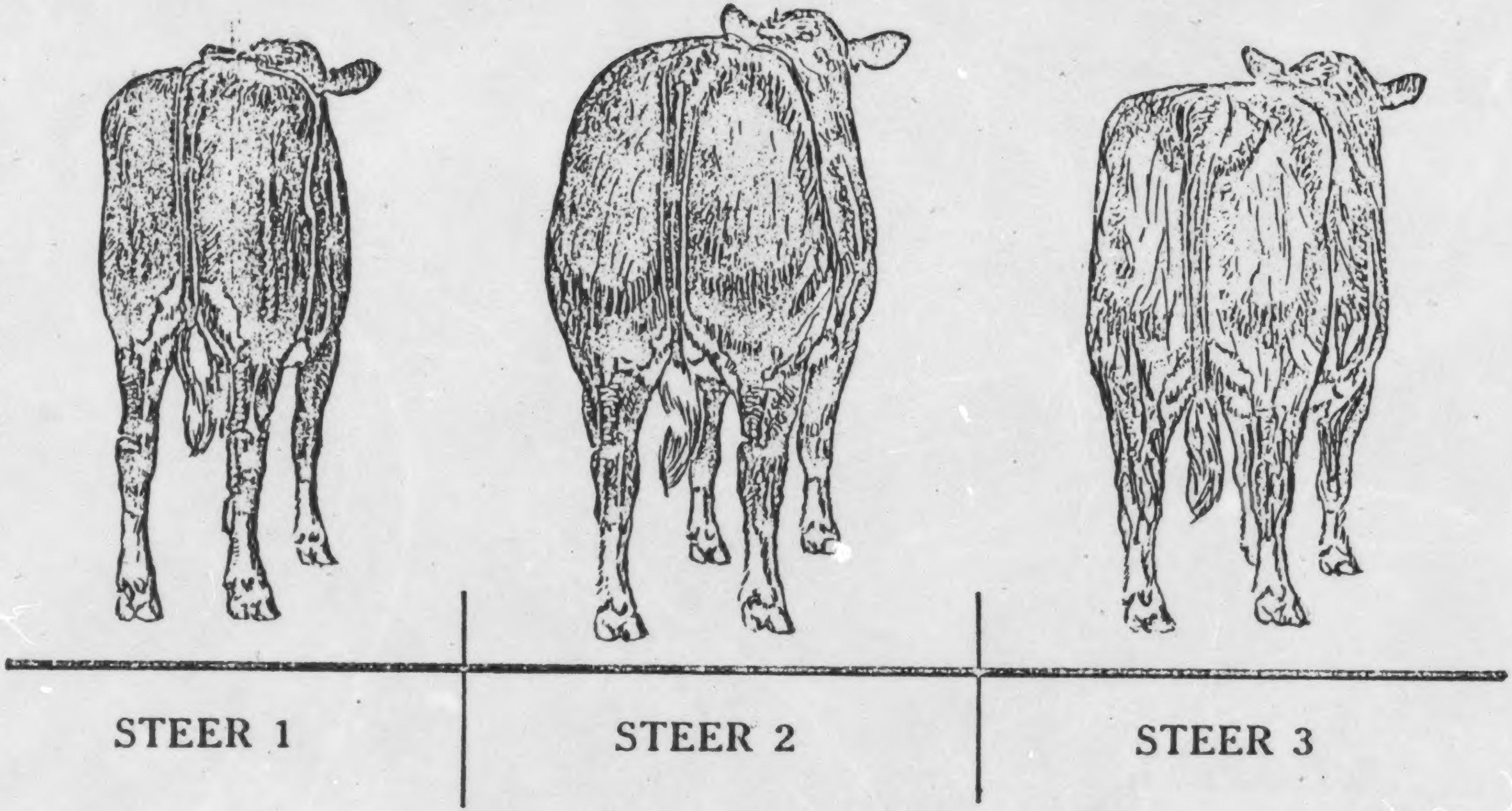


STEER 3

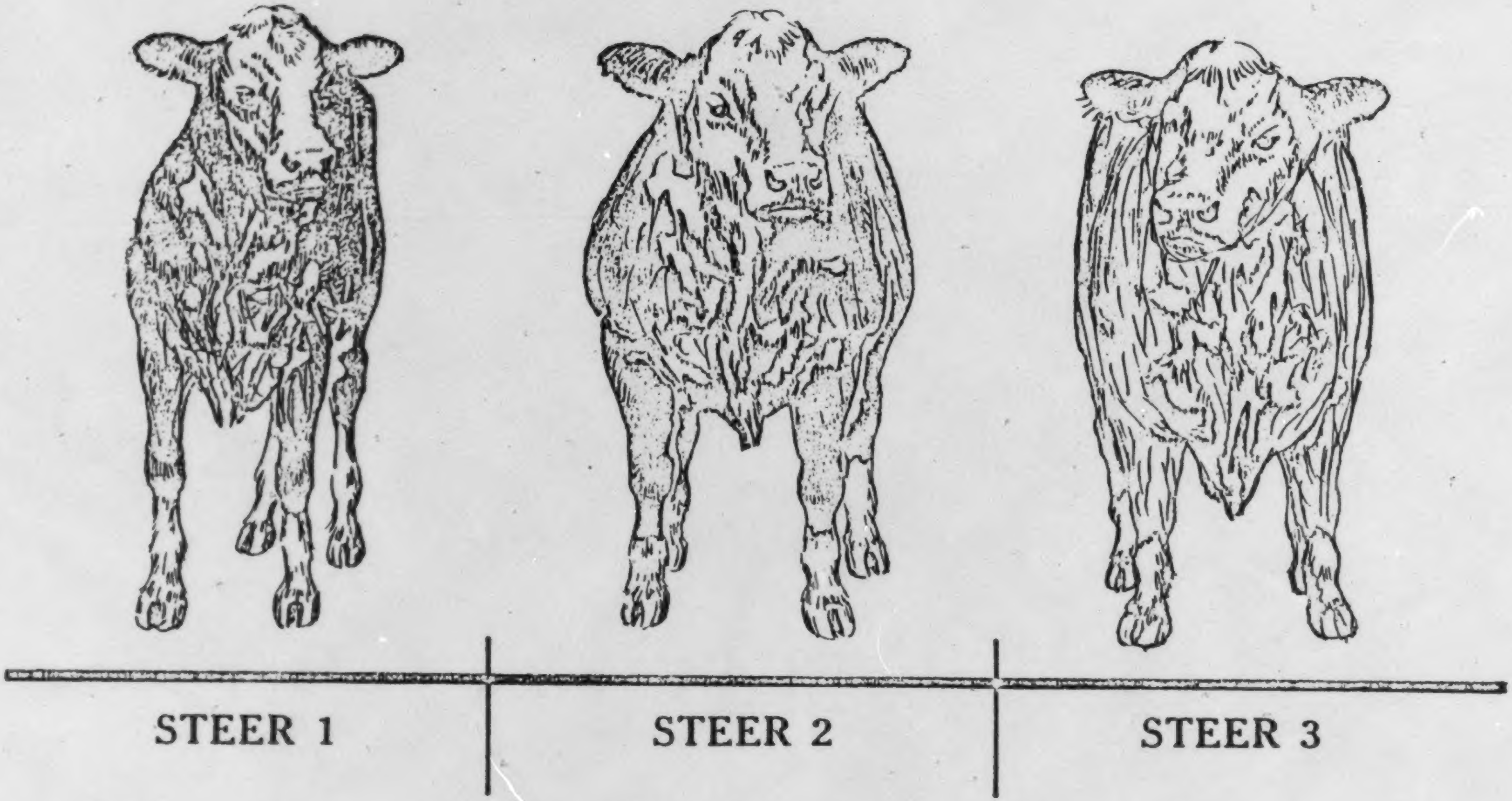
Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

COMPARISON OF LIVE STEERS
(REAR VIEW)


STEER 1
STEER 2
STEER 3

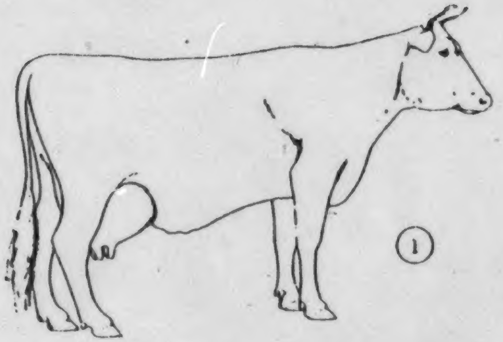
Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

COMPARISON OF LIVE STEERS
(FRONT VIEW)


STEER 1
STEER 2
STEER 3

Courtesy of Vocational Instructional Services, Texas A & M University, College Station, Texas

PLACE THIS CLASS OF DAIRY COWS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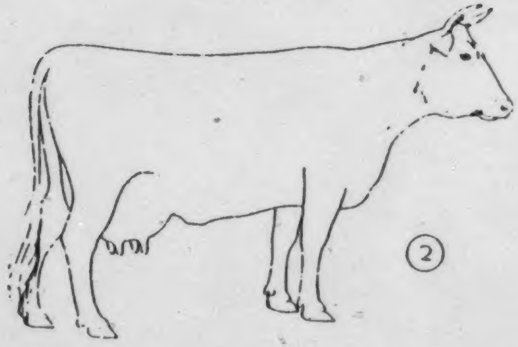
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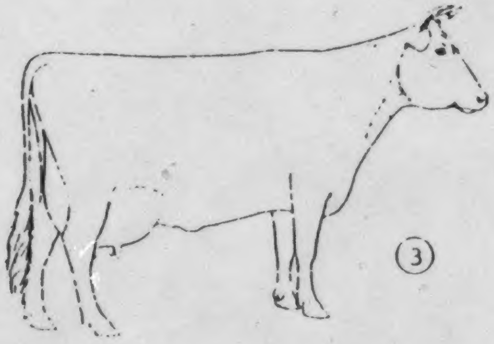
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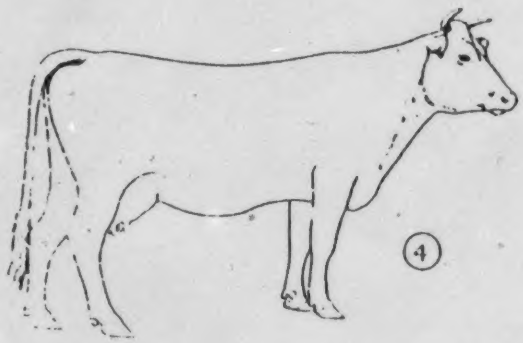
④

Source: Judging Dairy Cattle. Vocational Agriculture Service, 434 Mumford Hall, Urbana, Illinois

Job 6: Identifying Breeds of Livestock.

Objectives:

The objectives of this job shall be met at a level predetermined by the instructor. The manner in which they are evaluated shall also be determined by the instructor.

Upon completion of this job, the student shall be able:

1. to identify major breeds of beef cattle.
2. to identify major breeds of swine.
3. to identify major breeds of sheep.
4. to identify major breeds of dairy cattle.
5. to identify major breeds of horses.

Guide Questions:

1. What are the major breeds of beef cattle?
2. What are the major breeds of swine?
3. What are the major breeds of sheep?
4. What are the major breeds of dairy cattle?
5. What are the major breeds of horses?

References:

Basic Vocational Agriculture I. Vocational Instructional Services, Texas A & M University, College Station, Texas.

Hunsley, Roger E., W. Malcolm Beeson, and Julius E. Nordby. Livestock Judging, Selection and Evaluation. Danville, Illinois: The Interstate Printers & Publishers, Inc., 1978.

Interest Approach:

Ask the students to name their favorite kind of car or pro baseball, basketball or football team. Have them point out reasons why theirs is the best. Point out that each has good qualities but usually also some bad. Compare this situation to the livestock industry, pointing out that each breed has good qualities but none is best for every situation.

Key Facts:

I. Major Breeds of Beef Cattle.

A. Hereford.

1. Light to deep red body with white face, throat, brisket, underline, lower legs, switch, neck, and top of shoulder.

2. White face is dominant trait when crossed.

3. Horned.

4. Origin - England.

5. Noted for size and uniformity, vigor and foraging ability.

B. Angus.

1. Black.

2. Polled.

3. Origin - Scotland.

4. Noted for carcass quality and mothering ability.

C. Shorthorn.

1. Red, white, or roan.

2. Horned or polled.

3. Origin - England.

4. Noted for milking ability.

D. Charolais.

1. White or cream colored.

2. Horned or polled.

3. Origin - France.

4. Noted for size and muscling.

E. Polled Hereford.

1. Same markings as horned Hereford.

2. Polled.

    3. Origin - Iowa, from 11 naturally polled registered Herefords.
    4. Characteristics similar to horned Hereford.

F. Brahman.

    1. White to dark grey.
    2. Large, hump over shoulders and abundance of loose skin under neck and dewlap.
    3. Horned.
    4. Origin - India, sacred cattle.
    5. Noted for heat tolerance, disease and insect resistance.

G. Santa Gertrudis.

    1. Deep cherry red.
    2. Smaller hump than Brahman, some loose skin.
    3. Origin - Texas, Shorthorn crossed with Brahman.
    4. Adapted to warm climates, disease and insect resistant.

H. Simmental.

    1. Red and white, pattern somewhat follows Hereford but not as distinctly. Red varies from dark to almost yellow.
    2. Horned.
    3. Origin - Switzerland.
    4. Extremely docile, heavy milkers, large and heavily muscled.

II. Major Breeds of Swine.

A. Chester White.

    1. White
    2. Drooping ears.
    3. Origin - Pennsylvania.
    4. Noted for large litters.

B. Duroc.

1. Red.
2. Drooping ears.
3. Origin - New England states.
4. Noted for mothering ability and correctness of legs.

C. Hampshire.

1. Black with white belt from front legs over shoulder to other side.
2. Erect ears.
3. Origin - Kentucky.
4. Noted for size, crossbreeding ability, and prolific sows.

D. Yorkshire.

1. White.
2. Longer dish to face than Chester White.
3. Erect ears.
4. Origin - England.
5. Noted for size and prolific sows.

E. Poland China.

1. Black with 6 white points, head, 4 legs, and tip of tail.
2. Drooping ears.
3. Origin - Ohio.
4. Noted for size and carcass quality.

F. Spotted.

1. Black and white spotted.
2. Drooping ears.
3. Origin - Ohio, from Poland Chinas that were spotted. Formerly called Spotted Poland China.
4. Characteristics similar to Poland China.

G. Berkshire.

1. Black with 6 white points.

2. Pronounced dish in face with short broad snout.

3. Erect ears.

4. Origin - England.

5. Noted for balance and style.

III. Major Breeds of Sheep.

A. Suffolk.

1. White with black head, feet and lower leg. Short hair on black areas.

2. Ears held horizontal or drooped forward.

3. Polled.

4. Medium wool.

5. Origin - England.

6. Noted for ruggedness and alertness.

B. Hampshire.

1. White with black or brown face, ears, feet and lower leg.

2. Ears held forward and down.

3. Polled.

4. Medium wool.

5. Origin - England.

6. Noted for heavy bone and wide strong top.

C. Merino.

1. All white.

2. Wool covers entire body except for silky hair on nose and ears.

3. Wrinkled nose.

4. Some types have heavy folds and wrinkles in the skin.
5. Rams may be horned or polled, ewes are polled.
6. Fine wool.
7. Origin - Spain.
8. Standard of excellence for wool quality and quantity.
9. Noted for long productive life.

D. Rambouillet.

1. All white.
2. Similar to Merino in physical characteristics except larger and more heavily muscled.
3. Fine wool.
4. Origin - France, developed from Merino.
5. Excellent wool quality, good meat quality.

E. Columbia.

1. All white.
2. Hair on face, ears and legs.
3. Polled.
4. Medium wool.
5. Origin - U.S.
6. Noted for size and ranging ability.

F. Lincoln.

1. All white.
2. Hair on feet and face.
3. Long wool.
4. Origin - England.
5. Largest breed of sheep.

IV. Major Breeds of Dairy Cattle.

A. Holstein.

1. Black and white.
2. Horned.
3. Origin - Holland.
4. Noted for large size, high production.
5. Most popular breed.

B. Brown Swiss.

1. Light fawn to almost black.
2. Horned or polled.
3. Origin - Switzerland.
4. Noted for large size, very docile.

C. Guernsey.

1. Light fawn to red with white markings on face, legs, underline and switch.
2. Horned.
3. Origin - Isle of Guernsey in the English Channel.
4. Milk usually sells for a premium due to rich golden color.

D. Jersey.

1. Light fawn to black, may have white markings.
2. Horned.
3. Origin - Island of Jersey in the English Channel.
4. Smallest of major breeds.
5. Noted for dairy character and high quality milk.

E. Ayrshire.

1. Light to very dark red with white markings or white with red markings.

2. Horned, horns turn upward.
3. Origin - Scotland.
4. Noted for good udders.

V. Major Breeds of Horses.

A. Quarter Horse.

1. Bay, chestnut, black, or brown, with white markings on face and legs.
2. Well muscled, quick early speed.
3. Origin - Southwestern U.S.
4. Most versatile of major breeds.
5. Used for stock, racing and pleasure.

B. Palomino.

1. Golden and white.
2. Color is biggest asset.
3. Origin - U.S., from horses of Spanish descent.
4. Used for parade, pleasure, stock and saddle.

C. Appaloosa.

1. Dark roan or solid front end, white with dark spots over loin and hips. Front sometimes white with spots.
2. Color may be either blue or red.
3. Origin - Northwest U.S. from animals from central Asia.
4. Used for stock, pleasure, race and parade.

D. Arabian.

1. Bay, gray or chestnut.
2. Origin - Arabia.
3. Noted for beautiful head and neck.
4. Used for saddle, stock, pleasure and racing.

E. Morgan.

1. Bay, brown, black, or chestnut, with small amount of white markings on face and legs.
2. Origin - Vermont.
3. Noted for endurance.
4. Used for saddle and stock.

F. Standard Bred.

1. Bay, brown, chestnut, black, gray roan, or dun, with white markings on face and legs.
2. Origin - U.S.
3. Used for harness racing primarily.

G. Thoroughbred.

1. Bay, brown, chestnut, sorrel, black or gray, with white markings on face and legs.
2. Origin - England.
3. Developed as a running horse.
4. Used for racing, saddle, stock, hunters and jumpers, and polo.

Student Learning Activities:

1. Have the students select one or two different breeds, write to the breed association for information and pictures, and give a short report. Save the pictures to compile a scrapbook of breed pictures. Association addresses are listed below.
2. Have the students visit several livestock operations or a show to see live animals of various breeds.
3. Slides sets of breeds may be purchased from many different sources. These may be used to show breeds which are not found in the area.

Beef Breed Associations

American Angus Association
3201 Frederick Boulevard
St. Joseph, MO 64501

American Brahman Breeders Assn.
4815 Gulf Freeway
Houston, TX 77023

American-International Charolais
 Association
1606 Old Spanish Trail
Houston, TX 77025

American Devon Cattle Club, Inc.
Goldendale, WA 98620

Galloway International, Inc.
P. O. Box 511
Gainsville, TX 76240

American Hereford Association
Hereford Drive
Kansas City, MO 64105

American Milking Shorthorn Society
313 South Glen Stone
Springfield, MO 65802

Red Angus Association of America
P. O. Box 776
Denton, TX 76201

Red Poll Cattle Club of America
3275 Holdredge Street
Lincoln, NB 68503

American Scotch Highland Breeders Assn.
Edgemont, SD 57735

American Shorthorn Association
8288 Hascall Street
Omaha, NB 68124

Barzona Breeders Assn. of America
P. O. Box 9
Kirkland, AZ 86332

Foundation Beefmaster Association
201 Wyandot Street
Denver, CO 80223

International Brangus Breeders Assn.
908 Livestock Exchange Building
Kansas City, MO 64102

American Charbray Breeders Assn.
475 Texas National Bank Building
Houston, TX 77002

American Polled Hereford Assn.
4700 E. 63rd Street
Kansas City, MO 64130

American Polled Shorthorn Society
Livestock Exchange Building
Union Stockyards
Omaha, NB 68107

American Red Brangus Association
404 Colorado
Austin, TX 78701

Santa Gertrudis Breeders
 International Association
P. O. Box 1257
Kingsville, TX 78363

Blond D'Aquitaine Society of America
P. O. Box 250
Stillwater, MN 55082

American Chianina Association
Box 166
Perkinston, MS 39573

American Gelbvieh Association
Goute 1, Box 126
Newkirk, OK 74647

Hays Converter
c/o Senator Harry Hays
Calgary, Alberta, CANADA

North American Limousin Foundation
309 Livestock Exchange Building
Denver, CO 80216

Canadian Lincoln Red Association
c/o J. G. Lorriman
Box 447
Richmond Hill, Ontario, CANADA

International Maine-Anjou Assn.
P. O. Box 5636
Kansas City, MO 64102

American Murray Grey Assn., Inc.
Route 4, Box 179-A
Shelbyville, KY 40065

Pinzgauer Breeders Ltd.
Box 600
Picture Butte, Alberta, CANADA

American Simmental Association
P. O. Box 24
Bozeman, MT 59715

Canadian Welsh Black Cattle Society
Taber, Alberta, CANADA

Swine Breed Associations

American Berkshire Association
601 W. Monroe Street
Springfield, IL 62704

American Landrace Association
Box 111-112 1/2 N. Main Street
Culver, IN 46511

American Yorkshire Club
1001 South Street
Lafayette, IN 47902

Chester White Swine Record Assn.
817 East Ninth Street
Rochester, IN 46975

Hampshire Swine Registry
1111 Main Street
Peoria, IL 61606

Inbred Livestock Registry Assn.
Route 4, Box 207-A
Noblesville, IN 46060

National Hereford Hog Record Assn.
Rural Route 3
Dwight, IL 60420

National Spotted Swine Record
c/o Rick Maloney, Secretary
Bainbridge, IN 46105

Ohio Improved Chester Swine Breeders Association
Box 111
Green Castle, IN 46135

Poland China Record Association
501 East Losey Street, P.O. Box 71
Galesburg, IL 61401

Tamworth Swine Association
Rural Route 2
Cedarville, OH 45314

United Duroc Swine Registry
1803 W. Detweiller
Peoria, IL 61614

Sheep Breed Associations

Texas Delaine Merino Record Assn.
Route 1
Burnett, TX 78611

American Rambouillet Sheep
Breeders' Association
2709 Sherwood Way
San Angelo, TX 76901

Debouillet Sheep Breeders' Assn.
Roswell, NM 88201

American Cheviot Sheep Society
P. O. Box 5051
Lafayette Hill, PA 19444

Continental Dorset Club
P. O. Box 577
Hudson, IA 50643

American Hampshire Sheep Assn.
Stuart, IA 50250

American Oxford Down Record Assn.
Eaton Rapids, MI 48827

American Shropshire Registry Assn.
P. O. Box 1970
Monticello, IL 61856

American Southdown Breeders' Assn.
212 South Allen Street
State College, PA 16801

American Suffolk Sheep Society
52 North 1st East
Logan, UT 84321

National Suffolk Sheep Association
Box 324
Columbia, MO 65201

American Cotswold Record Association
Sigel, IL 62462

National Lincoln Sheep Breeders' Assn.
Route 1
West Milton, OH 45383

American Romney Breeders' Assn.
Department of Animal Husbandry
Oregon State University
Corvallis, OR 97331

Columbia Sheep Breeders'
Association of America
P. O. Box 272
Upper Sandusky, OH 43351

American Corriedale Association
P. O. Box 29-C
Seneca, IL 61360

U.S. Targhee Sheep Association
Security Bank Building, Box 2513
Billings, MT 59101

United Karakul Fur Sheep Registry
Box 669
Twin Falls, ID 83301

Dairy Breed Associations

Ayrshire Breeders' Association
Brandon, VT 05733

Brown Swiss Cattle Breeders' Assn.
800 Pleasant Street
Beloit, WI 53511

American Guernsey Cattle Club
70 Main Street
Peterborough, NH 03458

Holstein-Friesian Assn. of America
P. O. Box 808
Brattleboro, VT 05301

American Jersey Cattle Club
2105-J South Hamilton Road
Columbus, OH 43227

American Milking Shorthorn Society
313 S. Glen Stone
Springfield, MO 65802

Horse Breed Associations

American Albino Association, Inc.
Box 79
Crabtree, OR 97335

American Paint Horse Association
Box 12487
Fort Worth, TX 76116

American Saddle Horse Breeders Assn.
929 South Fourth Street
Louisville, KY 40203

Appaloosa Horse Club, Inc.
P. O. Box 403
Moscow, ID 83843

Arabian Horse Registry of America, Inc.
One Executive Park
7801 E. Belleview Avenue
Englewood, CO 80110

Cleveland Bay Society of America
White Post, VA 22663

The Morgan Horse Club, Inc.
P. O. Box 2157
West Hartford, CT 06117

The Palomino Horse Association, Inc.
P. O. Box 324
Jefferson City, MO 65101

Pinto Horse Association of America, Inc.
P. O. Box 3984
San Diego, CA 92103

American Quarter Horse Association
P. O. Box 200
Amarillo, TX 79105

Standardbred--United States Trotting
Association
750 Michigan Avenue
Columbus, OH 43215

Tennessee Walking Horse Breeders
Association of America
P. O. Box 286
Lewisburg, TN 37091

Thoroughbred--The Jockey Club
300 Park Avenue
New York, NY 10022